

# Accelerating progress towards universal health coverage (UHC) in Uzbekistan: a proposal for a National Health System Strategy 2030

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- Paper 1 (Service Delivery) was written by Michael Niechzial, with input from Aybek Khudaybergenov, Klara Yadgarova, Edward O'Rourke and Mohirjon Ahmedov.
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Each of the background papers was developed in 2022 in consultation with a technical working group incorporating a range of national stakeholders, including the Ministry of Health, the Ministry of Investment and Foreign Trade, and international stakeholders,

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## Abstract

The government of Uzbekistan engaged the World Bank and partners to support the development of a National Health System Strategy for Uzbekistan. This document presents a series of interconnected outputs from this process, namely: (i) the *Background Papers*, eight of which focus on a single component of Uzbekistan's health system (setting out for each a situation analysis from a universal health coverage perspective, and specific reforms for addressing these), while a ninth paper outlines the intended health system strengthening impacts of the proposed reforms at the primary health care level in a representative district; (ii) the *Concept*, in which the results of the component-specific situation analyses are brought together to define key cross-cutting challenges, and a cohesive program of reforms to address these is outlined; and the *Consolidated Roadmap*, in which four priority areas are defined, the proposed reforms in relation to each are outlined, and an indicative schedule of core deliverables and deadlines are presented. Taken as a whole, the report provides a detailed account of how the World Bank, in collaboration with its national and international partners, approached the support to the government of Uzbekistan in the formulation of the National Health System Strategy.

**Keywords:** Uzbekistan, Central Asia, health system strengthening, universal health coverage, UHC, primary health care, national health strategy, strategic planning in healthcare, health systems assessment, health financing, quality of care, digital health, public health, private sector governance, low- and middle-income countries, LMICs.

## Overview of this Document

The government of Uzbekistan engaged the World Bank and partners to support the development of a National Health System Strategy for Uzbekistan (henceforth: the Strategy). This document presents a series of interconnected outputs from this process and the resulting proposed Strategy. It is presented in two parts, as outlined below.

### Part 1. The Background Papers

This Part presents a series of nine papers, eight of which focus on a single component of Uzbekistan's health system (namely, service delivery, health financing, public health, quality of care, digital health, pharmaceuticals and medical devices, human resources, and governance of the private sector). Each of these papers sets out a situation analysis of the relevant component, and identifies key strengths and limitations (and the root causes of these limitations), with regard to the key policy goals of equity of access, quality of care, efficiency, and work-life balance for healthcare workers. Following this, each report outlines a series of specific reforms for addressing these limitations and root causes, and the national and international evidence base underpinning these.

This Part also includes a ninth paper, in which the intended impacts of the proposed *Strategy* at the local district level are outlined. In this section, the intended impacts are explained by defining the ground-level changes they will generate for service delivery at the district level (which is, in Uzbekistan, considered to be the primary care level). In a representative district ("District X"), service delivery capacity comprises a network of family medicine polyclinics, a multispecialty polyclinic, and a district general hospital. The section begins by outlining the *Current Picture* of the health system in "District X", focusing on the main operational challenges faced; and proceeds to outline the *Future Picture*, showing how the reforms set out in the proposed *Strategy* will address these challenges- and by doing so generate real, concrete, sustainable improvements to service delivery in the district.

### Part 2. The Concept and Consolidated Roadmap

This Part presents two outputs, the Concept and Consolidated Roadmap for the National Health System Strategy, submitted to the government of Uzbekistan for its legislative purposes. These documents aim to inform the development of Strategy-related policy documents (e.g., a Presidential Resolution). Their structure and content therefore reflect the norms and conventions of these document categories in the context of Uzbekistan.

#### Section 1. The Concept

This section presents:

- (i) the results of the detailed situation analysis undertaken by the World Bank team in collaboration with its partners;
- (ii) an analysis of the critical shortcomings in performance and their root causes; and
- (iii) an outline of the reforms through which critical shortcomings will be addressed, alongside the overall sequencing of their implementation (with the initial

improvements focused on specific, prioritized health states and conditions, defined according to international evidence on the most common conditions presented in different service domains).

This material is situated within the high-level objectives that have been set for *the Strategy* (focusing on the achievement of large-scale and sustainable improvements to equity of access, quality of care, efficiency, and work-life balance for healthcare workers), and an explanation of the causal pathways through which the proposed reforms will achieve these. The concept section is concluded by an outline of the *Indicators* through which progress towards achievement the objectives can be measured.

## **Section 2. The Consolidated Roadmap**

This section presents a series of proposed reforms, organized into four priority areas defined to address the key system-level failures identified in the situation analysis in a logical, evidence-based and comprehensive manner. The reforms identified for each priority area are supported by an indicative schedule of core deliverables and deadlines.

Taken as a whole, these two parts of the report provide a detailed account of how the World Bank, in collaboration with its national and international partners, approached the challenge of Strategy-formulation in Uzbekistan, and the main results of this approach.

## **Part 1: Background Papers**

## TABLE OF CONTENTS

<i>Acronyms</i> .....	3
<i>Executive Summary</i> .....	5
<b>INTRODUCTION</b> .....	10
<b>PAPER 1: Service Delivery</b> .....	14
Situation analysis.....	14
Recommendations and actions .....	18
<b>PAPER 2: Health Financing</b> .....	25
Situation analysis.....	25
Recommendations and actions .....	31
<b>PAPER 3: Quality of care</b> .....	39
Situation analysis.....	39
Recommendations and Actions.....	45
<b>PAPER 4: Human Resources</b> .....	56
Situation analysis.....	56
Recommendations and actions .....	66
<b>PAPER 5: Digital Health</b> .....	82
Situation analysis.....	82
Recommendations and actions .....	83
<b>PAPER 6: Pharmaceuticals and Medical Devices</b> .....	90
Situation analysis.....	90
Recommendations and actions .....	94
<b>PAPER 7: Public Health</b> .....	103
Situational analysis .....	103
Recommendations and Actions.....	109
<b>PAPER 8: Governance of the Private Sector</b> .....	117
Situation analysis.....	117
Recommendations and actions .....	121
<b>PAPER 9: Demonstrating practical impacts of the Strategy on service delivery at primary care</b> .....	127
<b>Conclusion</b> .....	147

## Acronyms

<b>AHRQ</b>	Agency for Healthcare Research and Quality
<b>AMR</b>	Antimicrobial Resistance
<b>BSE</b>	Basic Science Exam
<b>CAHPS</b>	Consumer Assessment of Health Care Providers
<b>CPD</b>	Continuous Professional Development
<b>CSE</b>	Clinical Science Exam
<b>DHP</b>	Digital Health Platform
<b>DRG</b>	Diagnosis-Related Group
<b>EHR</b>	Electronic Health Records
<b>EMR</b>	Electronic Medical Record
<b>EMS</b>	Emergency Medical Services
<b>EU</b>	European Union
<b>GE</b>	Government Expenditure
<b>GDP</b>	Good Distribution and Storage Practices
<b>GHE</b>	Government Health Expenditure
<b>HEU</b>	Health Economics Unit
<b>GIZ</b>	German Agency for International Cooperation
<b>HIU</b>	Health Information Unit
<b>HMEI</b>	Higher medical educational institutions
<b>HR</b>	Human Resources
<b>HTA</b>	Health Technology Assessments
<b>EHCI</b>	Euro Health Consumer Index
<b>ICT</b>	Information and Communication Technologies
<b>IFOM</b>	International Foundations of Medicine
<b>ILO</b>	International Labour Organization
<b>INN</b>	International Non-proprietary Names
<b>ISO</b>	International Organization for Standardization
<b>MHEI</b>	Medical Higher Education Institute
<b>MIFT</b>	Ministry of Investment and Foreign Trade
<b>MIS</b>	Medical Information System Billing
<b>MOH</b>	Ministry of Health
<b>N/EHR</b>	National Electronic Health
<b>NBME</b>	National Board of Medical Examiners
<b>NTP</b>	National Transformation Program
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>OOP</b>	Out-of-Pocket
<b>PACS</b>	Picture Archiving and Communication System
<b>PHC</b>	Public Health Center
<b>PHAP</b>	Public Health Assurance Purchaser
<b>PHR</b>	Personal Health Records
<b>PLHIV</b>	People Living with HIV
<b>PPP</b>	Public-private partnership
<b>PPS</b>	Pharmaceutical Procurement Services
<b>PTC(s)</b>	Pharmaceutical and Therapeutic Committee(s)
<b>RMS (ERP)</b>	Resource Management System
<b>SEWPHS</b>	Sanitary and Epidemiological Wellbeing and Public Health Service
<b>TMA</b>	Tashkent Medical Academy
<b>US</b>	United States of America
<b>USMLE</b>	United States Medical Licensing Examination

<b>US\$</b>	United States Dollar
<b>UNFPA</b>	United Nations Population Fund
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	The United States Agency for International Development
<b>WHO</b>	World Health Organization

## Executive Summary

### INTRODUCTION

**Purpose.** This section presents a set of nine background papers, developed to inform the *National Health System Strategy 2030* for Uzbekistan. The aim of the Strategy is to transform the performance of the health system in relation to four critical policy goals: access (equitable), efficiency, quality, and financial protection. The background papers presented in this section include:

- (i) A series of reports, focusing on a situation analysis of, and proposed recommendations for, improvement in eight health system components (service delivery, financing, public health, quality of care, digital health, pharmaceuticals and medical devices, human resources, and governance of the private sector<sup>1</sup>). Each paper identifies key impediments to the government's main system-level objectives - of enhancing access to care, efficiency, financial protection and quality of care; root causes of these; and reforms and specific actions needed to improve performance in each domain.
- (ii) An outline of the main operational challenges faced *at the district level*, and how the proposed recommendations (across the eight components) will, as a cohesive package, address these challenges.

**Approach.** Each of the background papers was developed in consultation with a technical working group, incorporating a range of national stakeholders, including the Ministry of Health (MoH), the Ministry of Investment and Foreign Trade (MIFT), alongside international organizations and development partners, including the World Health Organization (WHO), the United States Agency for International Development (USAID), the German Development Bank (KfW), the United Nations Population Fund (UNFPA), the German Agency for International Cooperation (GIZ) and the United Nations Children's Fund (UNICEF). The research for each of the papers included a diverse range of data sources and methodologies – including: (i) primary research conducted in-country between March and August of 2022; (ii) comprehensive literature reviews and document analyses; (iii) site visits; and (iv) key informant interviews and focus groups, collectively involving over 400 participants.

The background papers are the main source materials for both sections of Part 2 (*Concept and Consolidated Roadmap*) of this document. Part 2 has drawn from these papers to outline the intended outcomes of the Strategy (in terms of access, efficiency, quality, and financial protection), and define the pathways through which they can be achieved. In addition, each paper outlines a component-specific roadmap in which the proposed reforms / actions are outlined, alongside the lead implementation agency responsible for delivery, intended timelines, estimated implementation costs, and progress indicators. Based on these, the World Bank team, working with MoH and MIFT technical staff, has defined the *Consolidated Roadmap* for the Strategy as a whole.

**Research methods.** For each component, the research began by reviewing secondary data, followed by primary research conducted between March and August 2022. The research process incorporated:

- a review of existing documentation, including national-level government resolutions / decrees and government / international organization reports, alongside scientific evidence and media reports;
- site visits to multiple health care settings, including family and multispecialty polyclinics, private clinics / hospitals, district and regional hospitals, Republican Centers for medical specialties, and medical schools, among others; and

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<sup>1</sup> In view of the rapid growth in the scope and scale of the private sector in the country, it was decided to focus the workstream on governance on this increasingly important part of the health system.

- key informant interviews and focus groups involving *more than 400 stakeholders and front-line staff* – including public and private sector facility managers, senior clinicians, professional and industry associations, government officials, regulators, medical school rector, practicing physicians, nurses, patients and others.

## Results

**Situation Analysis.** The research revealed system-level challenges in each of the eight components, summarized briefly below:

1. **Service delivery.** The primary care system is undermined by a shortage of physicians and limited availability of medications and diagnostics. These gaps lead to low-quality care in family doctor points and policlinics, and high rates of unnecessary referrals (and visits without referral) to hospitals and specialty centres. In addition, the structure of secondary / tertiary care in the country is fragmented, with a large number of specialty centers in the public and private sectors.
2. **Financing.** Government health expenditure is, at just US\$41 per capita in 2019 (approximately one-quarter of the level in Kazakhstan), too low to fully fund the state guaranteed benefit package. The extent of underfunding is especially severe at the primary care level, leading to gaps in coverage and high out-of-pocket payments for essential health services.
3. **Quality of care.** There is a general failure to provide evidence-based care, especially in primary care, due to the limited competencies among staff, the lack of resources, and the absence of a national quality improvement system.
4. **Human resources.** The competencies of the health workforce are generally inadequate, due to poor training, large class sizes with inadequate bedside teaching, and lack of national qualifying exams that meet international standards.
5. **Digital health.** There is limited ability to monitor performance or take data-driven actions to address performance shortfalls due to absent or out-of-date information systems and technologies.
6. **Pharmaceuticals and medical devices.** The only partial centralization of procurement of essential medical products, and inadequate enforcement of standards for manufacturers and distributors, lead to high product prices, and variable quality.
7. **Public health.** Public health service delivery is fragmented. There are major gaps in the detection and management of notifiable conditions (e.g., low testing rates among high-risk groups: men who have sex with men (4 percent), injection drug users (31 percent), and sex workers (16 percent)); and no integrated electronic systems to collect and analyse epidemiological and laboratory data, including data on antimicrobial resistance and traffic accidents, and to inform public health actions.
8. **Governance.** There is a lack of evidence-based, data-informed strategic oversight of, or influence on, the operation and performance of the country's growing private sector.
9. **Service delivery at primary care (at district-level).** The number of physicians is insufficient to meet needs; physician and nurse competencies are inadequate; availability of key inputs (essential medicines and diagnostics) is inadequate; organizational efficiency is too low; and health authorities and managers have limited ability to monitor and optimize/improve performance using local data.

**Recommended Reforms.** To generate the system-level changes required to address these system-level shortcomings, the reports recommend the following:

- 1) **Service delivery.** The primary care system should be strengthened by: (i) ensuring that all patients have free access to the full range of essential drugs, diagnostics, and clinical services for the most prevalent conditions, to be provided by a sufficient number of well-trained, competent and motivated clinicians; (ii) introducing a stricter referral system to ensure that the majority of health services are provided at the primary care level. The secondary and tertiary care levels should also be strengthened,

with a phased shift from specialty hospitals to general hospitals at the regional and national levels, reflected in a re-allocation of resources, including capital investments.

- 2) **Financing.** The government should realize its long-standing commitment to allocate at least 15.4 percent of general government expenditure to health. This will enable higher starting salaries for primary care physicians and nurses, increasing physician numbers at the primary care level and enhancing the availability of other key clinical inputs (in line with the service delivery objectives outlined above). Increased resources will also enable incentive schemes to be introduced, aimed at encouraging staff to improve their clinical competencies, routinise the collection and use of clinical data for quality improvement, and better integrate service delivery across all tiers of care (e.g., introducing reimbursement mechanisms for provider-to-provider teleconsultations).
- 3) **Quality of care.** Structured documentation templates – including new clinical care flowsheets for primary care – should be introduced to aid the collection of quality-of-care data. A health information unit should be established with responsibility for collecting quality data from all facilities (public and private), setting standards, verifying data quality, certifying data collectors, and generating reports and analyses. A national quality indicator list should be established and a national reporting framework, including public reporting, be developed. Quality management capacity should be strengthened by the designation of organizations for building quality improvement skills in the health system and rapid adaptation of international quality improvement programs for local use. A requirement for all health facilities should be to have at least one staff with basic training in quality improvement, including the introduction of a paid quality improvement facilitator position in each district.
- 4) **Human resources.** Global codes of human resource management practice - as outlined by International Organization for Standardization (ISO) 30408:2016 Guidelines on Human Governance – should be adopted and a national registry of health workers developed. A comprehensive national qualifying examination system, which meets international standards, should be established and enforced, requiring all graduates to pass the exam prior to entering clinical practice. Specific opportunities for task shifting (e.g., specialist to family medicine doctor and family medicine doctor to practicing nurse) to increase the efficiency of the health system and to ensure the accessibility of care, with training programs modified/ expanded to support this recommendation. Medical educational programs should be modernized to focus on competency-based standards. New advanced professional educational programs leading to Baccalaureate, Masters, and PhD for nurses, midwives and other mid-level professions, should be introduced. Faculty expertise in clinical epidemiology and implementation science, critical to the expedited application of research findings to practice, to be enhanced through international study and partnerships with overseas collaborating centers.
- 5) **Digital health.** A national digital health governance board with advisory and management functions should be created. A national patient, facility and provider registries that include all residents, healthcare facilities (including all public and private facilities) and health workers should be established. The Ministry for Development of Information Technologies and Communications, with support from the MoH, should establish a clear and transparent universal certification process, building on international best practices, for software used in health facilities to foster quality and innovation through better equal engagement of public and private enterprises. Diagnostic image archives should be piloted and rolled-out. Provider-to-provider teleconsultation solutions should be implemented. A new fund for recurrent maintenance of ICT hardware and software in primary care facilities should be introduced.
- 6) **Pharmaceuticals and medical devices.** Pricing regulation policies on medicine should be reviewed. An ongoing system to measure medicine prices, availability, affordability, and price components should be developed. All local pharmaceutical manufacturing companies should be made fully compliant with

National GMP Guidelines by end-2023. A legally independent Medicines Regulatory Authority of Uzbekistan, which is free of competing interests and has an autonomous governance structure that includes the MoH, should be established. A centralized medicine and medical device supply management system in the public sector should be re-established. A national plan to promote rational and ethical prescription and appropriate use of medicines should be developed.

- 7) **Public health.** A national public health center should be established to bring the currently fragmented public health functions under the control of a single entity. Public health laboratories (387) should be reorganized into “laboratory hubs” equipped with modern, high-throughput laboratory equipment. An integrated information system to monitor behavioral risk factors, and major infectious and non-infectious diseases should be established. Testing and management for hepatitis B and C should be introduced at the primary care level. Sentinel surveillance sites for antimicrobial resistance should be established to routinely inform clinics on the local antimicrobial situation.

**Governance.** The government should strengthen governance of the private sector to ensure alignment in incentives with the goals of the Strategy (i.e., improved access, efficiency, financial protection and quality of care). Private facilities should be required to report into the emerging national health information system. Tax offices should provide to the MoH, on a quarterly basis, deidentified information on the types, volumes and prices of the medical services provided by the private sector. Regulation should be strengthened through the introduction of an independent regulator and purchasing arrangements should transition from ad hoc contracting to criteria-based, and eventually needs-based, strategic purchasing. Transparent and open policy dialogue structures should be introduced and institutionalized. Actions should be taken to ensure that public-private partnerships (PPP) are targeted at the capital investment priorities of the health system while ensuring that contracts do not undermine health economies at the national / oblast levels.

- 8) **Service delivery at primary care (at district-level).** Physician (and nurse) salaries should be increased, becoming competitive enough to attract and retain qualified staff. This will enhance access to care and work-life balance for health workers. Physician and nurse competencies should be enhanced, and, the delivery of health care at the distinct level should meet international standards. Adequate availability of key inputs (essential medicines and diagnostics) – initially focused on prioritized conditions – should be ensured at the primary care level. Organizational inefficiencies need to be addressed by targeting the inefficient distribution of physicians, the limited extent of task-shifting and lack of coordination across clinical settings. The lack of a robust performance monitoring system needs to be addressed by strengthening information systems.

## CONCLUSION

Collectively, these nine background papers provide the empirical evidence and analytics on which large-scale and sustainable improvements in access, efficiency, financial protection, quality of care, and other policy goals will be achieved. In each of the nine components examined, the situation analyses expose critical areas of underperformance and their systemic causes. Evidence-based and specific actions needed to implement the recommended reforms directly target critical shortcomings, providing the logical focus for the package of integrated reforms articulated in Part 2 of this document – in the *Concept* and the *Consolidated Roadmap*. It is important to note that, in areas where local quantitative data were missing, qualitative data, expert opinion, and international data were collected and used to inform recommendations. However, adjustments and course corrections should be undertaken as necessary as and when local quantitative data become available during the Strategy’s implementation. To further support the delivery of the proposed reforms, the MIFT and the MoH will need to ensure appropriate access to international expertise, at least during the first two-three years of the Strategy's national roll-out. In addition, the MoH should set up a strong data-driven and evidence-based evaluation and

monitoring system to track progress against the roadmap, with annual reviews, including the implementation of timely course-corrections, undertaken as and when required.

## INTRODUCTION

The government of Uzbekistan engaged the World Bank and partners to support the development of a National Health System Strategy 2030. This section presents two outputs from this process:

- (i) A series of reports, focusing on a situation analysis of, and proposed recommendations for improvement of, eight health system components (service delivery, financing, public health, quality of care, digital health, pharmaceuticals and medical devices, human resources, and governance of the private sector<sup>2</sup>). Each paper identifies key impediments to the government's main system-level objectives - of enhancing access to care, efficiency, financial protection and quality of care - and the root causes of these; and the reforms and specific actions needed to improve performance in the specific domain
- (ii) An outline of the main operational challenges faced *at the district level*, and how the proposed recommendations across the eight components will, as a coherent package, address these in practice.

Key elements of the background papers, including the objectives set for each, and the frameworks used to organize the situation analysis and recommendations (see table 1 following this introduction) were defined by the World Bank team in consultation with its national partners, including the Ministry of Health (MoH) and the Ministry of Investment and Foreign Trade (MIFT), and international partners, including the World Health Organization (WHO), the United States Agency for International Development (USAID), the German Development Bank (KfW), the United Nations Population Fund (UNFPA), the German Agency for International Cooperation (GIZ), and the United Nations Children's Fund (UNICEF).

Other outputs from this inclusive co-development process included in this document are:

- (i) A series of component-specific "Reform Roadmaps" in which timelines, costings, indicators, and the agencies responsible for delivery are presented; and
- (ii) The *Concept*, and a *Consolidated Roadmap* (i.e., an aggregate of the component-specific roadmap), in which the reforms are outlined alongside an overall Theory of Change (which sets out the causal pathways between the specific actions to be implemented and the overall outcomes to be achieved, in terms of large-scale and sustainable improvements in access to care, health system efficiency, financial protection of the population, and quality of care), in alignment with the norms of government documentation in Uzbekistan (see Parts 2 and 3 of this document).

### The approach taken to the Background Papers

Technical working groups, consisting of representatives of key national/international stakeholder organizations mentioned above, were established to guide the research on the eight health system components and the district-level analysis. From the beginning, MoH representatives (the key audience for these reports) were clear that the focus of this work should be evaluative and not descriptive – since there are already<sup>3</sup> reports that describe the existing operation and structure of the health system. The MoH's requests are reflected in the structure and content of the reports presented in this document, and which incorporate: (a) situation analyses on the component's performance and the system-level causes

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<sup>2</sup> In view of the rapid growth in the scope and scale of the private sector in the country, it was decided to focus the workstream on governance on this increasingly important part of the health system.

<sup>3</sup> E.g. Ahmedov M, Azimov R, Mutalova Z, Huseynov S, Tsoyi E and Rechel B. Uzbekistan: Health System Review. Health Systems in Transition, 2014, 16(5):1–137.; Ahmedov, M.. Chapter 10: Health. In Assessing Uzbekistan's Transition: Country Economic Memorandum. 2021. Available here: [https://www.euro.who.int/\\_data/assets/pdf\\_file/0019/270370/Uzbekistan-HiT-web.pdf?u=1](https://www.euro.who.int/_data/assets/pdf_file/0019/270370/Uzbekistan-HiT-web.pdf?u=1)

of underperformance; and (b) an outline of recommended reforms, underpinned by an international evidence-base or best practices, and a list of specific actions needed to implement them.

For each of the nine papers, a range of data sources and methodologies were utilized in the research. In each case, the research began by undertaking comprehensive reviews of the available secondary data, followed by primary research conducted during multiple visits to Uzbekistan between March and August of 2022. The research incorporated:

- comprehensive reviews of existing documentation, including national-level government resolutions / decrees, alongside government / international organization reports, academic studies and media reports;
- site visits to multiple health care settings, including family and multispecialty polyclinics, private clinics / hospitals, district and regional hospitals, Republican Centers for medical specialties, and medical schools; and a range of key informant and focus groups interviews<sup>4</sup> involving more than 400 stakeholder representatives and front-line staff – including public or private sector facility managers, senior clinicians, professional and industry associations, government officials, regulators, medical school rectors, practicing physicians, nurses, patients, and others.

The research was led by some 30 national / international experts. However, processes of research design and execution have been enriched by continued consultation with the working groups and other national and international stakeholders, including workshops with the Minister of Health and MoH department / division heads. Through these processes, the World Bank team has been able to secure detailed stakeholder feedback on the situation analyses, recommendations, and specific actions. In addition, upon completion of the component-specific research, the set of ‘critical’ recommendations articulated in each report and the accompanying *Concept* document, have been shared with key front-line staff who are those involved in the district-level health systems. Their feedback has been received and considered. That information has been used to assess the extent to which the proposed reforms / specific actions *as a collective* would address the critical challenges faced at the front-line, and the nature of any changes required.

The document ends with a short conclusion outlining the main areas of underperformance identified in the nine situation analyses, and the recommended reforms and specific actions that will comprehensively respond to them, and that constitute the Strategy.

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<sup>4</sup> As part of the process, district level eco-system – ¾ districts – where service delivery reforms will be concentrated – and also regional hospital level. They’re running this concept – and people are receptive.

**Table 1.** High-level objectives and analytical framework used in the background papers for each health system component

Component	High-level objectives	Analytical framework
Human resources	<ul style="list-style-type: none"> <li>- Adopt a unified approach to health workforce planning and management to ensure workforce development is responsive to population / service needs.</li> <li>- Ensure adequate numbers, equitable distribution, task shifting, retention and skill mix of a motivated and productive health workforce.</li> <li>- Strengthen health workforce regulation and management to ensure the quality of health workforce education and service delivery.</li> <li>- Improve the quality of education and training to meet the international competency requirements for medical and other healthcare providers.</li> <li>- Build the research capacity in medicine and other health sciences through development of clinical epidemiology and implementation science programs at all medical higher education institutions and major hospitals.</li> </ul>	<ul style="list-style-type: none"> <li>- WHO Health Labor Market framework (Sousa et al 2013, WHO 2016),</li> <li>- Interrelationships between health professionals’ job market and the education market model (McPake et al 2015).</li> </ul>
Pharmaceuticals and medical devices	<ul style="list-style-type: none"> <li>- Ensure equitable access to safe, effective, and quality assured affordable essential medicines and medical devices.</li> <li>- Develop and strengthen fit-for-purpose regulatory and other institutions and human resources for pharmaceuticals and medical devices.</li> <li>- Advance self-reliance by building a national pharmaceutical and medical device industry to produce quality-assured medicines.</li> <li>- Promote ethical and rational use of medicines and medical devices by health care providers and consumers.</li> </ul>	<p>Frameworks: “national medicine policy – a tree that bears fruit” and “structure of a complete national medicine policy,” Management Sciences for Health. 2012. <i>MDS-3. Managing Access to Medicines and Health Technologies</i>. Arlington, VA: Management Sciences for Health.</p>
Health financing	<ul style="list-style-type: none"> <li>- Securing sustainable financing to cover the health needs of the population.</li> <li>- Improving financial protection.</li> <li>- Fostering the efficient use of resources.</li> </ul>	<p>Framework for Health Financing and Health System Goals (WHO), as defined by the functions of a health financing system (i.e., revenue raising, pooling of resources, and purchasing of health services (including benefit package design).</p>
Governance of the private sector	<ul style="list-style-type: none"> <li>- Ensure that government has the information and intelligence it needs to monitor activity across the health system, including its public and private components, and set policy accordingly;</li> </ul>	<p>The World Health Organization “Governance Behaviors” framework</p>

Component	High-level objectives	Analytical framework
	<ul style="list-style-type: none"> <li>- Exert strong influence on the development and growth of the private sector, and on its day-to-day conduct and performance, to create an incentive and accountability regime that is pro-efficiency, pro-access and pro-quality;</li> <li>- Engage the private sector in formalized and transparent policy dialogue – to <i>support, shape, inform and enable</i> the sector’s contribution to policy goals, including the implementation of this <i>Strategy</i>; and</li> <li>- Take the lead in ensuring that the implementation of purchasing arrangements in general, and of public-private partnerships, in particular, align with MoH service gaps / priorities.</li> </ul>	
Quality of care	<ul style="list-style-type: none"> <li>- Better outcomes for diseases through evidence-based practices</li> <li>- Decreased use of inappropriate services</li> <li>- Improved patient communication</li> </ul>	WHO National Quality Policy & Strategy (NQPS) framework
Digital health	<ul style="list-style-type: none"> <li>- Foster data-informed decision-making through digital transformation and exchange of administrative data</li> <li>- Establish nationwide secure and standardized exchange of lifelong patient clinical data</li> <li>- Empower patients by providing access to personal clinical data and digital health services</li> <li>- Establish fit-for-purpose digital health governance, regulatory framework, and HR capacity.</li> <li>- Create ICT infrastructure with the ecosystem of interconnected digital health applications.</li> </ul>	Digital implementation investment guide: integrating digital interventions into health programs. Geneva: World Health Organization; 2020 The Data Use Partnership Theory of Change (PATH)
Public health	<ul style="list-style-type: none"> <li>- Strengthen systems for systematic assessment and monitoring of population health and its determinants.</li> <li>- Investigate, diagnose, and address health problems and hazards affecting the population.</li> <li>- Build and support skilled public health workforce.</li> <li>- Build and maintain strong organizational infrastructure for public health.</li> </ul>	Ten Essential Public Health Operations (WHO)
Service delivery	<ul style="list-style-type: none"> <li>- Enabling access to comprehensive care.</li> <li>- Enabling continuous patient-centered care.</li> <li>- Strengthening accountability for delivered services.</li> </ul>	Key Characteristics of Good Service Delivery (WHO)

# PAPER 1: Service Delivery

## Introduction

This paper provides a situation analysis of the organization of service delivery in Uzbekistan and draws on this situation analysis to identify key reforms and specific actions for improving performance. In undertaking the evaluation, commonly used frameworks for performing situation analyses were identified and employed. These were used to guide the primary research – which included multiple interviews and site inspections, and several visits to Uzbekistan. Initial review identified issues with the underperformance of primary care, inpatient care set up at the regional and national levels, physical estate, including availability of critical equipment that underpin essential diagnostic and management functions.

The scope and focus of this evaluation followed WHO guidelines which define good service delivery as being comprehensive, of high quality, accessible, continuous, person-centered, coordinated, accountable, and providing adequate coverage.

The approach chosen consisted of first setting high-level goals for Service Delivery for the Uzbekistan Health System Strategy 2030 to narrow the focus of the situation analysis. For the situation analysis, selected good service delivery characteristics (WHO) were chosen to ensure a systematic approach and coverage of recognized factors that affect and are related to the provision of care.

## Situation analysis

***The current situation.*** In-country research conducted over successive visits has revealed a number of major challenges with respect to health service delivery in Uzbekistan. In the public sector, service delivery is organized into three different levels: national, regional, and district/city levels, of which the latter is considered primary care (PHC) in its entirety (comprised of family medicine points/polyclinics, a multispecialty polyclinic, and a district general hospital). Major sources of organizational inefficiencies and deficiencies in accessibility, comprehensiveness, and continuity of care are evident across these levels. *At the national and regional levels*, there is a large network of specialized centers and hospitals focusing on specific diseases or procedures and providing covered care for only a fraction of the population. This fragmentation undermines efficiency – making it impossible for the health system to take advantage of economies of scale or scope. *At the district/city level*, chronic under-funding of PHC centers leads to limited accessibility and coverage of a range of critical services, which in turn foster overuse of hospitals. The changing epidemiological profile of the country (in particular, the shift from acute to chronic conditions) requires changes to this structure to refocus resources on PHC services, and improve connections between primary, secondary, and tertiary level services, enabling continuity of care for patients.

These challenges are further considered below by each service level, from *PHC to tertiary levels*.

### Family doctor points and family doctor polyclinics

Family doctor points and family polyclinics are PHC units that are responsible for providing outpatient health services to the population. At the beginning of 2022 there were 909 family doctor points and 1,010 family polyclinics in the country. The government has recently revised staffing norms to promote a team-based nurse-driven population health approach where family physicians, with a team of 3-4 nurses, form a core care team. While family doctor's points and polyclinics are supposed to carry out screening activities for early detection of both communicable and non-communicable diseases and to monitor and improve the health status of the population living in their catchment area, a defined package of services that is aligned with services to be provided by family medicine facilities in well-performing health systems

is still missing. In 2019, 110,389,151 visits were registered at Family doctor points and polyclinics (3.26 per capita), representing only 47.5 percent of all outpatient contacts registered in public health care facilities.

To date, the capacities and competencies of the family doctor points, and polyclinics' staff and their equipment are limited and do not allow staff to carry out routine functions that their counterparts do internationally, including effective management of prevalent conditions such as ischemic heart disease, hypertension, diabetes, respiratory diseases, and hepatitis without referring the patient to other levels of care (such as the district multispecialty polyclinic). This is further aggravated by the shortages of qualified staff especially in remote rural areas where access to care at PHC level remains limited.

Furthermore, services that are essential to accurate diagnosis and follow-up such as laboratory services are limited and not well coordinated with the needs of daily outpatient practice. The number of tests run daily is small yet there are typically laboratory physicians and technicians overseeing what amounts to a few dozen tests done per day.

Being aware of the limitations of the PHC facilities and services, many patients bypass the family doctor point and polyclinic and go directly to a multispecialty polyclinic, or even higher levels of the public service delivery system, or to the private sector. Consequently, specialty services, including secondary and even tertiary care level facilities are overloaded with patients that should be treated by family medicine doctors, leaving family doctor offices and polyclinics under-utilized, and competing for access with patients with more complex or rare diseases who indeed need the time and attention of the specialist medical doctor. In addition, this situation creates and further aggravates inequalities in access to care where those who have the means and the knowledge to bypass the PHC system get access to (what they perceive as) quality care whereas others do not.

#### *Multispecialty polyclinics and district general hospitals*

Each district / city operates a multispecialty polyclinic usually associated (co-located) with a district level general hospital (average size: 320 beds). In 2019, there were 116,381,833 outpatient visits (approximately 50 percent of all outpatient contacts and 3.46 / capita) managed at these multispecialty polyclinics and of which 3,276,417 patients (2.82 percent) have been hospitalized. This rather low percentage of hospitalization shows that most patients seen and treated at district multidisciplinary polyclinics are family medicine level patients, who should be seen and treated at the level of family doctor points and polyclinics.

**Table 1: Outpatient contacts in public and private health care facilities in Uzbekistan, 2019**

<b>Outpatient contacts in 2019</b>	<b>#</b>	<b>%</b>
<i>Private sector facilities*</i>	70,000,000	-
Family doctor points and polyclinics	110,389,151	47.55
Polyclinics of the District Medical Associations	116,318,833	50.11
Regional (Oblast) Multidisciplinary Children's Hospitals	2,741,973	1.18
Regional (Oblast) Multidisciplinary Hospitals	963,018	0.41
National (Republican) Referral Hospitals	1,721,764	0.74
<b>All Public Facilities and Services</b>	<b>232,134,739</b>	<b>100.00</b>
<b>Annual contacts per person (public facilities)</b>	<b>6.91</b>	
<b>Annual contacts per person (public &amp; private facilities)</b>	<b>9.00</b>	

*\*Number estimated based on the following assumptions: There are approximately 3,500 private sector facilities providing medical care (facilities offering dental care only amount to more than 50 percent of the total number and are excluded.) With an average number (FTE) of 2.5 medical doctors per facility, each of them consulting at an average of 4 patients per hour on 8 hour working day, all private sector facilities would manage 280,000 contacts per working day. Considering 250 working days per annum, the total number of contacts p.a. would add to 70,000,000.*

### Maternity Departments and Perinatal Centers

At the district level, maternity departments are co-located with the district general hospital, however, the concept of integrated service delivery has not been fully implemented. The number of admissions to the maternity centers is high: in 2019, over a total number of 814,960 registered deliveries, there were 1,107,782 admissions to maternity departments at the district level and 179,802 admissions at the oblast perinatal centers, together 1,287,584 admissions. In other words, in average, each pregnant women who delivered got hospitalized at least 1.5 times during her pregnancy! And among the most frequent causes of admission were pregnancy related anemia and acute respiratory infection, both conditions that usually can be managed in an outpatient care setting. Considering evidence-based standards for pregnancy related inpatient care (delivery + 15 percent cases with pre- and/ or postpartum complications) and an ALOS for normal delivery of 3 days and 5 days in case of Cesarean section (15 percent) and complications, the needs for inpatient beds, at a Bed Occupancy Rate (BOR) of 85 percent, would add to 10,000 beds instead of the 18,000 beds currently available in both maternity departments (approximately 15,000) and perinatal centers (approximately 3.000).

### Regional Hospitals

Regional multi-profile hospitals provide services in each of the 13 regions (Oblasts) of Uzbekistan, except for the city of Tashkent. There are separate facilities for children. These centers represent the second level of hospital care in the country's service delivery system, however, considering the scope of diseases treated, regional level hospitals seem to provide the same set of services as the district hospitals. In 2019, all regional centers registered a total of 2,741,973 outpatient visits in pediatric care and 963,018 contacts in hospitals for adults. Of these totals, 238,495 children (8.7 percent) and 156,791 adults (16.3 percent) were hospitalized. The low share of admissions and the fact that there is no significant difference in the availability of medical equipment demonstrate a rather inefficient and inappropriate use of the regional centers. Most of them need to refer patients to specialized republican centers for diagnostic services and therapeutic interventions. To address these issues, most regional multi-profile hospitals accommodate a certain number of beds belonging to the branches of Republican Specialized Scientific and Practical Medical Centers. Through this link, regional hospitals receive support and mentorship from the republican

specialized centers in the form of online consultation, telemedical advice and/or qualified practical coaching and supervision during site visits.

In addition to the multidisciplinary hospitals, there are 72 independent specialized hospitals and “dispensaries” in disciplines such as TB-Care, Dermato-Venerology, Psycho-Neurology, Addiction, Endocrinology, and Cardiology, general and perinatal diagnostic centers with a total inpatient capacity of 10,000 beds!

#### Republican Specialized Scientific and Practical Medical Centers and Clinical Hospitals

The Republican Specialized Scientific and Practical Medical Centers and Clinical Hospitals are supposed to be umbrella institutions leading in modern medical-diagnostics, research, training and education and treatment of complex, and advanced stages of diseases. In total, there are 23 of these Centers and 8 so-called “Clinical Hospitals” at the national level. The Republican Specialized Scientific and Practical Medical Centers and Clinical Hospitals were created to satisfy the needs for highly sophisticated and specialized care.

**Table 1: Admissions for Inpatient Care Public and Private Hospitals, 2019**

Hospital admissions in 2019	#	%
<i>Private sector facilities*</i>	3,832,500	
District Hospitals	3,276,417	74.72
Regional (Oblast) Multidisciplinary Children's Hospitals	238,495	5.44
Regional (Oblast) Multidisciplinary Hospitals	156,791	3.58
Regional (Oblast) Specialist Hospitals	419,990	9.58
Republican Centers (Tashkent)	293,007	6.68
<b>All Facilities</b>	<b>4,384,700</b>	<b>100.00</b>
<b>Admissions to public facilities per 1,000 population</b>	<b>131</b>	
<b>Admissions to public &amp; private facilities per 1,000 population</b>	<b>245</b>	

\*Number estimated based on the following assumptions: The number of registered inpatient beds in private sector facilities is 42,000. With a 75 percent BOR and an ALOS of 3 days, the number of admissions would be 3,832,500.

Though the main goal of the institutions is to provide highly qualified care at international quality standards, the scheme is somehow outdated considering the demographic change (towards a gradually ageing population) and epidemiological shift from acute, infectious diseases, to chronic, non-communicable diseases (including e.g. cardiovascular diseases, diabetes, asthma, and cancer) requiring interdisciplinary concepts and procedures for both diagnosis and treatment. In 2019, 1,721,764 outpatients were managed at the Republican Centers (0.74 percent of all OPD contacts managed in public facilities) and 293,007 patients (17 percent) were hospitalized.

#### **Summary of the key challenges**

Considering the above, key challenges in service delivery can be summarized as follows:

- ✓ Limited performance of the public service delivery system due to the following system weaknesses:
  - Limited competencies of staff and inadequate equipment at PHC level. For example, district hospitals lack patient monitoring equipment such as cardiac monitors, oxygen saturation monitors, electronic thermometers as well as a lack of biomedical engineering

infrastructure to maintain and repair medical equipment, that is essential to inpatient care. As a result, inappropriate use of care and inefficient use of referral level care due to overload of regional and national hospitals with PHC patients.

- Fragmented structure of tertiary care services (23 republican centers) that lack interaction and cross consultation opportunities with physicians from other services. For example, obstetricians should have easy access to general surgical assistance in the same facility to manage difficult postpartum hemorrhage cases. Oncologists should have easy access to cardiologists, pulmonologists and infectious disease specialists. As a result, there are multiple unnecessarily fragmented facilities, such as standalone dermatology and infectious disease hospitals, that should be incorporated into multidisciplinary facilities.
  - Limited local clinical leadership to monitor and improve care practices, and provide regular facility-based continuing professional development and quality improvement activities.
- ✓ Non-integrated and highly fragmented private sector (approximately 7,300 licensed clinics and hospitals / 42,000 beds.)

## Recommendations and actions

**A vision of the future.** The government of the Republic of Uzbekistan would improve population health through enhanced access to safe, reliable, effective, appropriate and affordable care for the whole population.<sup>5</sup> Through the National Health System Strategy, the MoH should act to improve service delivery structure and performance involving both public and private health care organizations. The outcome would result in a health system that effectively addresses population health needs in the most efficient manner.

The vision of a good service delivery system is a PHC-centered system that is efficient, equitable, and responsive to the needs of the local population and meets evidence-based standards. Such a system requires a balance of adequate “bricks and mortar” facilities that are equipped, supplied, and maintained so that well-trained and supported medical and nursing staff can efficiently attend to the care needs of the local population. It also requires well-coordinated primary, secondary and tertiary-level services as good service delivery requires all elements of the care system to function together as one holistic system. The vision for service delivery is more than just a vision of facilities, but also includes necessary infrastructure and human and other resources that work as a single ‘organism’ to provide evidence-based care in a most efficient manner. This section of the report focuses largely on facilities, equipment and supplies but must be viewed together with the other elements of the overall system that are covered in other sections of this report.

As a strategy objective (by 2030), a reformed service delivery system in Uzbekistan should be able to manage about 80 percent of the population’s outpatient and 85 percent of inpatient health needs at the primary health care/district level. To meet this goal, Uzbekistan has already adequate numbers of physicians and office visits, comparable to most European countries. Uzbekistan also has more than adequate numbers of community hospital beds. Indeed, the rate of annual hospital discharges per 1,000 population exceeds that of nearly all other OECD countries, indicating more than adequate capacity, which is likely an indicator of excessive hospital utilization. Given the numbers of facilities and capacity, the Uzbekistan’s health system is more than adequate for the needs of a good service delivery system. The attainment of future vision would require modernization of facilities but more importantly, a care delivery organization and staff training that would result in a healthcare system that is more efficient and effective.

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<sup>5</sup> Decree of the President of the Republic of Uzbekistan No. UP-5590 of December 7, 2018 “About complex measures for radical enhancement of health care system of the Republic of Uzbekistan”.

A major challenge to providing efficient and effective service delivery is to strengthen currently underperforming primary care and overcome the fragmentation of subspecialty and hospital services that currently exist at the secondary and tertiary levels. European, North American and most other countries have already adopted multi-profile general hospitals as the core inpatient facility type that incorporate any specialty services within the overall umbrella of a general hospital. It is worth noting that in the rankings of the 200 best hospitals in the world, all of them are general multi-profile hospitals or situated to share a campus with a multi-specialty hospital.

As noted previously, service delivery involves more than just buildings, organization, and equipment. Training, staffing, supplies and other elements of healthcare infrastructure are critical to effective service delivery. The recommendations below address primarily the building, organization, and equipment elements of service delivery, while the other critical elements are addressed in the sections that follow.

#### **TO REALISE THIS VISION, THE MoH NEEDS TO:**

##### *1. At the primary care / district level*

- ensure laboratory, patient monitoring and central supply services and equipment are provided at levels appropriate for each level (family doctor point, polyclinic, district hospital).
- integrate outpatient specialty care into district hospitals to make effective use of specialist doctors.
- provide centralized lab and diagnostic unit at district hospitals (along with logistics support to transport specimens from clinics to laboratories and also computerized laboratory reporting.)
- strengthen communications to allow general practitioners to have easy and convenient access to telephone or computer-based consultation with local and regional subspecialists to avoid the need to send the patient to another facility.
- introduce “clinical care pathways” for common hospital admission diagnoses to promote organized and efficient patient care based on evidence-based medicine.
- strengthen facility / physical assets through renovation, management, and maintenance.

##### *2. At the secondary / tertiary referral care (regional / national) levels*

- gradually (in a phased approach) but systematically transform highly specialized regional and national (republican) referral hospitals into general hospitals; for selected diseases, some of those hospitals may provide tertiary or quaternary level care in highly specialized “centers of excellence” that are integral part of the facility (sharing resources such as diagnostic equipment, operating theaters, etc.)
- regional, and republican Emergency Medical Services hospitals should be fully integrated into the referral care system and transformed into general hospitals - all of them providing emergency care; the central coordination of Emergency Medical Services (EMS) transport services shall remain in place.

The following four (4) recommendations relate directly to the underpinning objectives outlined above.

#### **Improve access to quality primary health care (including MNCH services) at Family Doctor Offices, Family Polyclinics, and Multispecialty Polyclinics and Hospitals (1)**

##### **Specific Actions:**

- ✓ *Review and expand the scope of covered services* to be provided at PHC level to adequately respond to current and future health care needs of the population in line with the objective of providing 80 percent of outpatient services at family medicine clinics and 85 percent of inpatient services at the district hospital

level. Prioritize 20 prevalent health care services and relevant clinical conditions for outpatient and 10 conditions for inpatient care at the first stage.

- ✓ *Strengthen diagnostic, preventative and management services in primary care.* Family medicine doctors should have access to services and inputs essential to the diagnosis and treatment of prevalent conditions such as cardiovascular diseases (ECG / Stress ECG), chronic obstructive pulmonary diseases - COPD (lung function testing, ambulatory oxygen supply), diabetes mellitus (HBA1C test), breast cancer (mammography) and colon cancer (recto-colonoscopy) to effectively address priority diseases representing the major causes of morbidity and premature mortality.
- ✓ *Assess the current status of infrastructure and equipment of family doctor clinics and hospitals considering the revised scope of services, the organizational and physical integration of maternity departments, and the sharing of both staff and facilities between the multispecialty polyclinics and district hospitals.*  
*NB: In most regions, the current bed capacity offered in maternity clinics is beyond the needs for MNCH care; there are inappropriate hospitalization patterns including hospitalization for pregnancy related anemia or non-pregnancy related pathologies, such as Acute Respiratory Infection (ARI).*
- ✓ *Review national norms and standards for both infrastructure and equipment of district hospitals, and develop a list of requirements in cooperation with international architects specialized in the design of health care facilities in order to comply with international norms and standards for modern hospital buildings. Any future capital investments in hospital infrastructure (rehabilitation, modernization, expansion, or new construction) should follow these standard design requirements.*
- ✓ *Establish a list of facilities by category of investment needs to have a basis for more detailed budget planning considering the following categories: A - Infrastructure OK, only some additional equipment required; B - Minor rehabilitation / modernization works plus equipment; C - Major rehabilitation / construction works and equipment; D - Facility to be replaced.*
- ✓ *Prioritize improvements to infrastructure and equipment in primary care.*
- ✓ *Reorganize / centralize laboratory services following a master plan for the development of laboratory services to be elaborated in 2023. Other than for very basic tests, smaller and standalone polyclinics would have their laboratory needs more efficiently served by a logistic system to transfer samples to a district level public laboratory. District laboratory services should be expanded along with an efficient logistics system to transport specimens and deliver results. Laboratory results should be immediately computer accessible from all facilities with a failsafe system to immediately alert physicians to critical laboratory values. Laboratory physician needs must be reviewed, and personnel centralized rather than dispersed as is currently the case.*

*The aim is to rationalize and improve quality of laboratory testing. Family medicine clinics would only provide Point of Care (POC) testing (e. g. blood and urine sugar test) where no specific equipment and lab specialist staff is needed. Any hematology / biochemistry / bacteriology test requiring sophisticated machinery and qualified staff shall be provided at centralized public labs, preferably located at the district central hospital; additional labs may be needed in certain districts depending on geographical access and logistics.*

- ✓ *Introduce provider to provider telemedicine solutions to improve PHC service. Prepare a Master Plan for the development of a telemedicine network.*

*The network (cf. recommendations of the Digital Health section) should allow to systematically implement teleconsultation and (in a second step) tele-imaging between the lower and the higher referral level, i.e. among family medicine clinics, and district, regional, national levels to strengthen competencies of medical staff working in the periphery of the health system and to avoid unnecessary referral on the one hand as well as missing critical diagnoses and need for intervention on the other hand.*

- ✓ *Train PHC medical and paramedical staff in the provision of expanded coverage services.*
- ✓ *Promote long-term career development of family doctors by introducing subspecialties (e.g., for cardiac, respiratory, endocrine or pediatric diseases) and by allowing them to work at the level of district hospitals.*

*At present, the traditional roles of physicians, nurses and other healthcare workers, defined in professional standards and job descriptions, do not correspond to the needs of modern, community-based health services. Existing regulations limit the use of more efficient staffing strategies. Primary care physicians have limited scope of practice and refer to subspecialists for tasks that elsewhere are managed by well-trained family doctors. Staffing of multispecialty polyclinics with medical subspecialists is inefficient as they usually do not have the number of cases needed to keep the subspecialist busy. Nurses in PHC settings are limited by tradition and regulations to a "doctor's assistant" role. The understanding of "professional nursing" as used internationally is yet to be developed.*

## **Improve access to quality (secondary) referral level care at regional (oblast) hospitals (2)**

### **Specific Actions:**

- ✓ Reorganize secondary referral level care to be provided at regional multi-profile / general hospitals.
- ✓ Determine scope and volumes of multidisciplinary inpatient and outpatient care to be provided at regional general hospitals.
- ✓ Develop a Master Plan for the upgrading of regional general hospitals in terms of infrastructure and equipment including the integration of separate regional specialized hospitals.
- ✓ Integrate "dispensaries" for subspecialties such as "Anti-TB", Dermato-Venereology, Psycho-Neurology, Addiction services, Endocrinology, and Cardiology into regional general hospitals and their respective outpatient and inpatient departments (to replace some of the subspecialty hospitals that still exist). Same for general and perinatal diagnostic centers.
- ✓ Enhance performance monitoring system for regional general hospitals.

## **Rationalize service delivery at National / Republican Specialized Scientific and Practical Medical Centers and Clinical Hospitals (3)**

### **Specific Actions:**

- ✓ Establish a list of National / Republican Centers to be transformed into multi-profile General Hospitals and develop master plans for the transformation of these Centers using a phased approach. Candidates for the first stage of transformations are provided as Cases below.
- ✓ Ensure that appropriate specialized subspecialty services are available in all regional hospitals to minimize the need to transport patients to Republican Centers

### **Example case 1. EMS Center**

**Rationale:** In 2019, the EMS Center admitted 46,658 patients for inpatient care with an ALOS of 5.06 days and a BOR of 95 percent of its 680 beds. Most frequent causes of admission were the following (in the order of magnitude): i) all kinds of Trauma; ii) Broncho-pulmonary pathologies; iii) *Cholelithiasis*; iv) Cranio-cerebral injury, v) Acute Cerebrovascular Accident; vi) *Acute appendicitis*; vii) Coronary Heart Disease and Acute Myocardial Infarction; viii) *gynecological pathologies*; ix) *Urolithiasis*; and x) *peptic ulcer and duodenum disease*. Considering the scope of pathologies, the EMS Centre is already operating as a general hospital for those patients who cannot afford going to any of the secondary level general hospitals because treatments are free in EMS hospitals (the Republican EMS Centre has the highest amount of government subsidies – around 3.3 million US\$ p.a.).

Conditions related to various kinds of trauma (except for polytrauma and cranio-cerebral injury), coronary heart disease, stroke, even in acute / emergency situations should be managed within a national network of general hospitals as not each and every patient could and would be transported to the Republican EMS Centre. Conditions such as appendicitis, cholelithiasis, urolithiasis, gynecological pathologies and peptic ulcer should mostly be treated at district hospital level and only be referred to specialized hospitals in particular and selected cases (acute abdomen with possibility of perforation and other complications such as sepsis, patient with relevant comorbidities, multiple recurrences of the disease, etc.). In the interest of improved access to quality care and increased coverage for real emergency cases, the EMS Centre shall be transformed into a general hospital (with a well-equipped and well-staffed emergency care unit – as in any general hospital).

The following activities should be implemented:

- Determine the scope and volumes of multidisciplinary inpatient and outpatient care to be provided at the EMS Center.
- Expand EMS capacity in the newly established 4 EMS cardiovascular and trauma units in city hospitals to avoid overcrowding of the Republican EMS Center.

- Develop Master Plan for reorganization, rehabilitation and equipment considering the new concept of a multi-profile general hospital.
- Develop detailed planning for infrastructure works and equipment and initiate procurement process.
- Implement construction works and supply equipment according to the plan.

Example case 2. Vakhidov Center for Surgery

**Rationale:** In 2019, the V. Vakhidov Center for Surgery admitted 8,804 patients for inpatient care with an ALOS of 10.47days and an occupancy rate of only 62 percent of its 370 beds. Most frequent causes of admission were the following (in the order of magnitude): i) coronary heart disease; ii) acute and chronic calculous cholecystitis; iii) hepatic cirrhosis; iv) gastroduodenal ulcer; v) chronic glomerulonephritis; vi) acquired heart valvular disease; vii) hepatic hemangioma; viii) lower extremity varicose; ix) hydrothorax. Despite the fact that there is a Specialized Republican Hospital for Cardiology, coronary heart disease is the most frequent cause of admission. But also, cholelithiasis and cholecystitis, the next most frequent causes of admission (see comments above under the EMS hospital), hepatic cirrhosis and glomerulonephritis (no organ transplant is being performed at the center) and gastroduodenal ulcer as well as varicose of lower extremities – all these diagnoses indicate that the center already operates, to a large extent, as a general hospital including non-surgical cases and related treatment. Its formal and official transformation to a general hospital would allow for a more rational use of inefficiently exploited resources (hospital beds, staff, and equipment) considering that the Republican Centers are generally rather well equipped.

The following activities should be implemented:

- Determine scope and volumes of multidisciplinary inpatient and outpatient care to be provided at the V. Vakhidov Center.
- Develop a Master Plan for reorganization, rehabilitation and equipment considering the new concept of a multi-profile general hospital with excellence centers in specific areas.
- Develop detailed planning for infrastructure works and equipment and initiate procurement process.
- Implement construction works and supply equipment according to the plan.

Example case 3. The Cardiology and Surgical Angio-neurology Center - merging into one Center for (Diagnosis and Treatment of) Cardiovascular Diseases

**Rationale:** Patients of both centers would benefit from a more integrated, patient centered approach as both centers provide complementary care to patients with the same or similar diagnoses (e.g. arterial hypertension, aortocoronary bypass surgery in patients with coronary heart disease, carotid endarterectomy in cases of cerebrovascular accident, etc.). Keeping both centers separated leads to unsatisfactory and inefficient treatment options for this epidemiologically important group of diseases.

The following activities should be implemented:

- Analyze current and determine future scope and volumes of services to be provided by the new (combined) center.
- Determine requirements for infrastructure measures (works) and equipment (goods) needed to accommodate both centers in one building.
- Develop detailed planning for infrastructure works and equipment and manage procurement process.
- Implement construction works and supply equipment according to the plan.

Example case 4. The Clinical Hospital for Eye Diseases and the Center for Eye Microsurgery - merging into one Center for Ophthalmology (Diagnosis and Treatment of Eye Diseases)

**Rationale:** Similar to the centers for Cardiology and Surgical Angio-Neurology, patients of these two centers would also benefit from a combined and integrated approach as both centers provide complementary care to patients with eye diseases. Patients suffering from glaucoma, refractive impairment, dacryocystitis, and retinal diseases are all treated in both centers – from a clinical (quality of care) and an economic perspective, the merger would produce significant improvements especially as the Eye Surgery Center has a BOR of only 61 percent and an ALOS of below 1 day – i.e. it basically is a day care surgical center that can easily be combined with the eye diseases hospital that has an extremely low BOR and almost no patient admitted (1 per day for an ALOS of 3.7 days).

The following activities should be implemented:

- Analyze current and determine future scope and volumes of services to be provided by the new (combined) center.
- Determine requirements for infrastructure measures (works) and equipment (goods) needed to accommodate both centers in one building.
- Develop detailed planning for infrastructure works and equipment and manage procurement process.
- Implement construction works and supply equipment according to the plan.

Example case 5. The Urology Clinical Hospital and the National Center for Nephrology and Kidney Transplantation - merging into one Center for Diagnosis and Treatment of Kidney Diseases

**Rationale:** The rationale is similar to the above. Both centers treat patients with diseases of the urogenital system, including kidney transplant. Interestingly, it is the nephrology center that offers kidney transplant (from living donors) and not the (surgical) urology center. Both treat patients with urogenital infections but, otherwise, are rather complementary in terms of diseases and treatment. Each center has around 100 inpatient beds with a BOR between 75 and 80 percent and ALOS of almost 3 weeks (20 days) for the nephrology center and 10 days for the urology center – in other words, there is room for increased efficiency and reduced patient load by supporting treatment in peripheral (district and regional general) hospitals (chronic kidney diseases such as glomerulonephritis, diabetic nephropathy, urogenital tract infection), developing urological surgery in regional (general) hospitals and concentrate on cases that require tertiary level referral care (kidney transplant, systemic lupus erythematosus SLE, malignancies of the urogenital system). This approach would strengthen the efficient use of resources and improve access to quality care for the population.

The following activities shall be implemented:

- Analyze current and determine future scope and volumes of services to be provided by the new (combined) center with a view to transform into a general hospital.
- Determine requirements for infrastructure measures (works) and equipment (goods) needed to accommodate both centers in one building.
- Develop detailed planning for infrastructure works and equipment and manage procurement process.
- Implement construction works and supply equipment according to the plan.

In the future, tertiary and quaternary level care should be provided in general, multidisciplinary hospitals, that may develop Centers of Excellence for certain subspecialties, such as e.g., organ transplant. As such there would be no need for one single, centrally located tertiary or quaternary care center. Depending on the number of cases to be treated, there could and there should be more than one tertiary or quaternary care center of equal standing.

- a. Develop a Master Plan for the integration of care for patients suffering from infectious diseases into multidisciplinary / multi-profile hospitals at the national, regional, and district levels.
  - Determine the needs for infrastructure improvements and equipment to accommodate infectious diseases patients in general hospitals.
  - Provide detailed plans per facility and manage tender processes (e.g., as regional lots.)
  - Implement construction works and supply equipment according to the plan.
  
- b. Develop Master Plan for the integration of dental care into general hospitals at the national, regional and district levels
  - Determine the needs for infrastructure improvements and equipment to accommodate dental services in general hospitals.
  - Provide detailed plans per facility and manage tender processes (e.g., as regional lots.)
  - Implement construction works and supply equipment according to the plan.

#### **Strengthen capacity and competencies in health care facility, services, and resource management (4)**

##### **Specific Actions:**

- ✓ Provide comprehensive training in health care facility (physical assets), health service and resource management (financial, material, and human resources) to healthcare staff in leadership positions.
- ✓ Develop / update curriculum for a comprehensive training to strengthen competencies and capacities of managers at all levels of the service delivery system considering recommendations made under the Quality, Pharma, Human Resources, and Financing sections.
- ✓ Introduce central procurement management for medical and non-medical consumables for all public health facilities to use economy of scale effects and assure quality of products according to national and international norms and standards (see also recommendations of the Pharma section).
- ✓ Introduce incentives to promote compliance with referral guidelines at all levels of the health care system. *The idea is that treatment at a district general hospital requires referral from family medicine doctors, visit to and admission at a regional hospital requires referral from the district level facility etc. so that without such referral, patients would have to pay out of pocket. This system is currently being piloted in Syrdarya, and the results shall be evaluated and transformed into lessons learned for the roll-out of the system at the national level. It should however be noted that the mandatory introduction of co-payments for violating the referral system required the availability of adequate services at the respective lower level of care. In other words, the above mentioned strengthening of PHC services is a precondition for a national roll-out of a co-payment system. During the interim period, co-payments should be nominal until appropriate levels of care are established at each level. Only then co-payments can increase all the way up to the full cost of care to effectively influence patient behavior.*

#### **Promote transparency and accountability for outputs, outcomes, and impact of health care services provided at public and private health care facilities (5)**

##### **Specific Actions:**

- ✓ Introduce performance and quality assessments considering appropriate mechanisms for the participation of the target population and civil society organizations.
- ✓ Elaborate template for regular reporting on key performance indicators for hospital services.
- ✓ Standardize mandatory data collection and reporting for all public and private health care facilities.
- ✓ Issue annual performance reports.

## PAPER 2: Health Financing

### Introduction

This paper provides an assessment of the health financing context of Uzbekistan and makes recommendations to address key challenges that are identified. For each recommendation, a list of necessary actions for its implementation are outlined. Data for analysis is mainly from document reviews and stakeholder interviews. Analysis of the current financing context is guided by the framework defined by the functions of a health financing system: revenue raising, pooling resources, and purchasing health services (including benefit package design). Recommendations are informed by international evidence/experience and Uzbekistan's unique context. These recommendations focus on moving the health systems towards achieving the over-arching goals of health financing. These goals are to: (1) secure sustainable financing to cover the health needs of the population (2) improve financial protection; and (3) foster efficiency in the use of resources.

### Situation analysis

Analysis of main challenges. In-country research conducted over successive missions has revealed a number of challenges with respect to the health financing context in Uzbekistan. These relate to sufficiency of financing for the health sector and coverage of the current benefit package, arrangements for purchasing of services and the capacity to do so, and the way in which resources are distributed in response to the health needs of the population. These challenges are outlined in more detail below:

#### **Poor financial protection in the health system**

*High level of Out-of-Pocket (OOP) payment in the health system results in significant financial barriers to accessing health care, especially for the poor.*

In Uzbekistan, despite a consistent increase in overall health expenditure, total expenditure on health in absolute terms remains low, and most of this is accounted for by Out-of-Pocket (OOP) payments. High levels of OOP payments are associated with lower levels of financial protection. In 2021, OOP payments accounted for 60.3% of health spending, virtually the same level as in 2000. This was higher than the average for the Central Asian region of 53.6% and the average for Low and Middle-income Countries of 52.7% in 2021.<sup>6</sup> For services accessed through OOP spending, both the poorer and wealthier members of the population face the same absolute financial barrier to accessing care. However, the poor are more vulnerable to impoverishment in the face of these financial barriers. Although private voluntary health insurance is growing (and accessible for the wealthiest), it still accounts for less than 1 percent of total health expenditure in Uzbekistan.<sup>7</sup>

Unsurprisingly, in 2018, it was estimated that 14.4 percent of households in the country incurred catastrophic health expenditure (CHE)<sup>8</sup>, and 2.5 percent of the population was pushed into poverty as a result of household expenditure on health.<sup>9</sup> **Based on the population of the Uzbekistan in 2018, around 2,400 people were pushed into poverty every day due to expenditure on health.**

#### **Insufficiency of government health expenditure**

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<sup>6</sup> WHO (2024). Global Health Expenditure database. Geneva: World Health Organization. Available here: [https:// apps.who.int/nha/database/](https://apps.who.int/nha/database/) (accessed 12 April 2025).

<sup>7</sup> Based on author's calculation from data sourced from World Bank Development Indicators 2022

<sup>8</sup> Spending on health that causes households to reduce expenditure on basic necessities such as food, shelter, schooling. There are various methodologies for estimating CHE, in this case, a household is considered to have experienced CHE if its expenditure on health is equal to or exceeds 40 percent of their non-food consumption expenditure.

<sup>9</sup> Data is from the Listening to the Citizens of Uzbekistan Survey (2018).

*Despite increases in overall government expenditure in recent years, the level of government expenditure on health still remains too low to cover basic health services for the entire population*

Government health expenditure in per capita terms increased from US\$37 in 2010<sup>10</sup> to approximately US\$ 60 in 2021.<sup>11</sup> With this significant increase over the years, Uzbekistan compares favorably to per capita government health expenditure in some neighboring countries (Kyrgyzstan and Tajikistan) and the average for Lower Middle-Income Countries (LMICs). However, Uzbekistan's per capita government expenditure is still much lower than what may be required to provide a basic set of health services to the entire population.

A 2017 article by McIntyre et al<sup>12</sup>, based on reviews of a series of international studies, recommended a target of US\$ 86 per capita to promote universal access to primary care in low-income countries. Countries of the OECD<sup>13</sup> spend approximately US\$ 530 per capita on average (based on purchasing power parity<sup>14</sup> on primary care services.<sup>15</sup> In purchasing power parity terms, Uzbekistan's total government health expenditure in 2021 was approximately US\$ 264 per capita. These are indications that government health expenditure at this level is too low to provide universal access to basic services for the population in Uzbekistan.

**Insufficiency of financing to adequately cover the State-Guaranteed Benefit Package**

As a result of the low level of government expenditure, the state guaranteed benefit package, although limited, is not fully funded. Government health expenditure finances a benefits package that includes primary care, emergency services, specialized care for specific illnesses<sup>16</sup> and vulnerable groups.<sup>17</sup> Recently, this benefits package has been expanded to cover poor households included in the government's register for social protection. In essence, primary care and emergency care services are free for the entire population. Beyond primary care (which also includes inpatient care provided in the district-level hospitals), only those suffering from specified illnesses and/or those who belong to designated vulnerable groups are entitled to free care. In reality, even at the primary care level, **households still often incur significant OOP for medicines and diagnostic services that are supposed to be in the State-guaranteed benefit package.** The magnitude of this challenge is not accurately known as there is no data to estimate the frequency of stock-outs, and the number of times (and amount) that households pay for services that are nominally free at the primary care level. However, anecdotal evidence indicates that this is quite common.

It is important to note that the government is committed to increasing its expenditure on health. The government has a policy target<sup>18</sup> of committing 15 percent of total government expenditure to the health sector by 2025 and increasing public expenditure on health as a percentage of Gross Domestic Product (GDP) to 5 percent by 2025. In 2021, government health expenditure as a percentage of total government expenditure was approximately 12 percent. Government health expenditure as a proportion of GDP was 3 percent. In recent years, overall government expenditure (GE) has been increasing at a higher rate than government health expenditure (GHE). This could be an indication of reducing priority placed on the

<sup>10</sup> Data from World Bank Development Indicators

<sup>11</sup> Based on author's calculation from Ministry of Finance data

<sup>12</sup> Data is from the Listening to the Citizens of Uzbekistan Survey (2018).

<sup>13</sup> The OECD's 38 members are: Austria, Australia, Belgium, Canada, Chile, Colombia, Costa Rica, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, the United Kingdom and the United States.

<sup>14</sup> Exchange rate based on equal amount of products that can be bought in different countries

<sup>15</sup> Based on author's calculation from OECD (2021), Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/ae3016b9-en>.<sup>16</sup> Endocrinological diseases (including diabetes), poliomyelitis, tuberculosis, leprosy, mental conditions, HIV/AIDS and syphilis, and cancer.

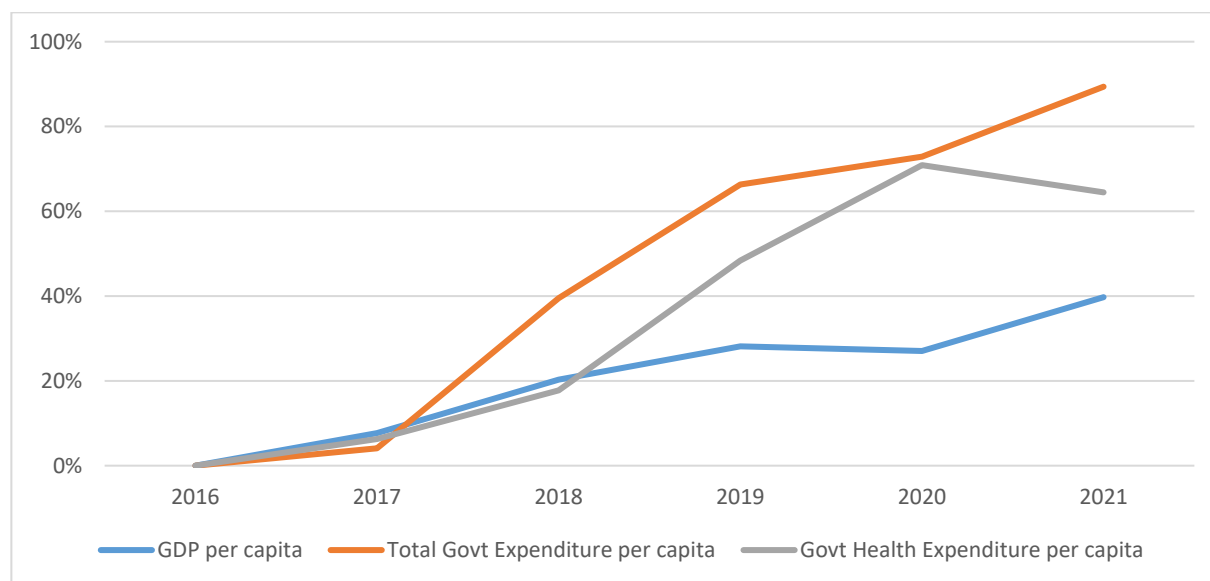
<sup>16</sup> Endocrinological diseases (including diabetes), poliomyelitis, tuberculosis, leprosy, mental conditions, HIV/AIDS and syphilis, and cancer.

<sup>17</sup> Such as single pensioners registered at the social services, persons disabled as a consequence of the Chernobyl nuclear accident, and poor households.

<sup>18</sup> As expressed in "Concept for development of the health care system of the Republic of Uzbekistan for 2019-2025"

health sector by the government. Figure 1 shows trends in indexed GDP, GE and GHE from 2016 to 2021, (adjusted for inflation).

**Figure 1: GDP, Government Expenditure, and Government health expenditure indexes (per-capita, indexed and inflation adjusted) – Base Year 2016 (Index Value 100)**



Data sources: Expenditure and GDP figures from Ministry of Finance. Inflation figures from Asian Development Bank (Asian Development Bank)

From 2016 to 2021, government health expenditure increased at an average annual rate of 15 percent in real terms; and total government expenditure increased at an average growth rate of 20 percent. While a positive forecast on economic performance from 2023 onwards is projected, current levels of increase in government health expenditure may not be sustainable for an extended period; given the higher annual growth rate in general government expenditure compared to GDP in recent years. Indeed, achieving government expenditure at 15 percent of total government expenditure by 2025 will inject significant additional resources into the health sector in the short term. However, this would most likely be based on a more modest growth rate in overall government expenditure, going forward. Following discussions with the Ministry of Finance, estimates of additional finances for health through the budgeting process are made based on two growth scenarios. A scenario with 2 percent annual real growth in overall government expenditure, and a more optimistic scenario with an average of 5 percent real growth per annum. Based on 2 percent growth scenario, if 15 percent of government expenditure is allocated to health, then total government health expenditure will increase from UZS 23.9 trillion in 2022 to UZS 34.2 trillion in 2025 (increase by a factor of 1.4). Based on the 5 percent growth rate scenario total government health expenditure will increase to UZS 37.3 trillion in 2025 (increase by a factor of 1.56).

An important question is whether this will be enough to attain UHC or at the minimum, to sufficiently finance the current state guaranteed benefit package and other reform activities necessary to improve overall health system performance. With no cost estimates for the financial implications of the current benefits package, or UHC, it is unclear what additional financing is needed to fully deliver on the government's current commitment.

Based on stakeholder data, there is political will to increase public spending on health, but there are some bottlenecks within the system that have prevented even higher levels of allocation to the health sector. These include a lack of policy guidance on financing norms to inform resource allocation. Examples include costed norms for the benefits package. In addition, there is a dearth of capacity for analysis to inform health financing strategy in the MoH. As a result, engagements with MoF are not accompanied by well-articulated and evidence-based justifications for an increase in allocations to the health sector. Associated with this challenge is a deficient health information system that does not produce evidence to support

assessment and planning. These bottlenecks make it difficult to develop an evidence-based motivation for increasing allocations to the health sector.

### **Inefficiency in the use of public resources for health**

Historical budgeting discourages efficiency at facility level and in resource allocation in response to health needs. Public health providers at the district and region are funded under the direction of the central government through line-item budgeting with rigid ceilings imposed on providers for each expenditure category. These are supposed to be based on norms, such as pre-set number of facility beds in relation to a catchment population size and utilization rates. For inpatient care, budgeting for staffing levels is to be based on the number of beds as determined by norm for the catchment population. For primary care, the population size of catchment areas is supposed to be the basis for allocation of human resources. This budgeting process reinforces centralized control. Although it should promote uniformity, equity and efficiency in services delivery, in reality, budget allocations to health facilities have mostly been done on a historical basis, with no adjustments in response to changes in populations and their needs. In the case of district hospitals allocations have become more arbitrary. The number of beds and bed-days are often no longer a reflection of the needs of the population. Overall, these have resulted in financial allocations that are not clearly linked to population needs at the primary care level and also at higher levels of care. Based on interview data, health facilities are not encouraged to minimize costs as reductions in expenditure are likely to lead to budget cuts. This creates the incentive to maintain expenditures as high as the budget allows.

### **There is no explicit strategic purchasing<sup>19</sup> for publicly financed health services**

The financing source and payment mechanism for publicly funded health services depend on the level of care, and whether the service is part of the state-guaranteed benefit package. For primary care, an approach based on line-item budgeting is used for provider payment. This is also the case for regional-level health services for vulnerable groups and those suffering from illnesses that are within the benefits package. For other cases at regional level facilities, a fee-for-service model is used, and households pay the health facilities directly. Note that even where services fall outside the benefits package, prices for regional level hospitals are set by MoH. Currently, around 50 percent of the revenue for regional level facilities is from the government, the rest is financed through OOP. For republican-level facilities, approximately 20 percent of their budget is stipulated to come from the government while 80 percent is from OOP (direct payment from patients). This 20 percent of republican-level health facilities' budget is paid on a fee-for-service basis and is to cover vulnerable groups and specific diseases in the benefits package. Prices for these republican level hospital services are set by the MoH and MoF, regardless of the population group being served. It is important to note that at the regional and Republican level hospitals, doctors earn additional income in relation to the volume of 'private' cases treated.

Payment arrangements for publicly financed health services do not include any specific incentives to influence provider behavior to align with objectives of improving quality of care or efficiency in resource use. Integrated approach to provider payment based on input budgeting is used for publicly funded primary and secondary health services. Services within the state-guaranteed benefit package that are provided by national level health facilities are reimbursed on a fee-for-service basis. However, the payment levels to providers are capped by benchmarks that are set based on prevailing prices in the private sector. With fixed prices, the incentive for providers is to increase productivity especially where their marginal costs for additional cases is lower than the reimbursement price. However, information on quality of care (treatment outcomes, adherence to treatment guidelines, etc.) is not used in determining payment. Neither is there any explicit mechanism in the payment arrangements to reduce overservicing or reduction in the cost of treatment.

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<sup>19</sup> According to WHO: "Purchasing is considered strategic when these allocations are linked, at least in part, to information on provider performance and the health needs of the population they serve, with the aim of realizing efficiency gains, increasing equitable distribution of resources and managing expenditure growth."

It is important to note that there are formal guidelines on the use of financial incentives to promote higher health worker performance in primary care facilities, especially for better quality and efficiency of services. In general, these have not been successfully implemented due to budget limitations and the complexity of the guidelines for this bonus scheme.

Recently, the government has started contracting with private health providers for tertiary level health services. These are in specialties such as urology, cardiology and traumatology. There are concerns that these purchasing arrangements need to be more systematic, and strategic in influencing volumes, prices and quality of care provided by the private sector. Also, there does not seem to be a consideration for any adverse effect that these purchasing arrangements with the private sector may have on the public sector.

### **Limited technical and public finance management capacity to implement strategic purchasing within the public health system**

To improve the performance of the health system, the government is piloting a major health system reform in the Syrdarya Region which started in 2021, of which a shift towards strategic purchasing is a key component. These reforms are to be rolled out in 6 regions from 2023. The move towards strategic purchasing under the pilot involves:

(a) Introduction of mandatory insurance and a provider/purchaser split. A State Health Insurance Fund (SHIF) has been established and funds for national, regional and districts health services are to be eventually pooled into the SHIF. The SHIF is to be the single purchaser of health services under the dispensation of the Mandatory Health Insurance System.

(b) Introduction of alternative purchasing mechanisms such as the use of capitation for primary care and DRGs for inpatient hospital care. For hospital inpatient care, the use of DRGs was to be implemented in a phased approach by applying this to only 10 percent of the budget for inpatient hospital care. The remaining 90 percent through Global Budgets – based on historical levels.

(c) An expansion of the benefit package. Provider payment reforms were to move away from the input-based line-item budgeting to one where budgets for health facilities are linked to output and population need. Although the SHIF has been established, the other financing aspects of **the pilot have not been successfully implemented**. Some key issues have been noted in the piloting of health financing reforms. These are:

**Additional funds necessary for implementation of provider payment reform were not made available in the budget.** Implementation of capitation was to be based on a new set of costed norms that required 16 percent more than the actual budget allocation for primary care. Consequently, the level and distribution of resources for PHC has **continued to be determined through historical budgeting**. Review of the pilot indicates a lack of coordination and cooperation between the MoH, MoF and SHIF as a contributing factor to budgetary challenges for implementation of capitation. Similarly, due to budget limitations, DRG-based payment system was piloted on a budget-neutral basis. As a result, DRG base rates varied from month to month depending on the budget limit, which is not the way DRGs work.

Where changes were implemented, challenges associated with provider payment reforms include: (1) **General lack of understanding** by hospital management of the rationale and objectives of these reforms. This adversely affected buy-in and support for the reforms at the operational level. Review of the pilot indicated that there is general lack of understanding even among key MoH, SHIF and MoF officials on the concept of capitation, how it would contribute to the specific reform objectives, and thus the rationale for its implementation. (2) **A lack of management and technical capacity at SHIF and facility level** that is required to effectively operate in the context of the new provider payment systems. For example, the process for verification of provider submissions (hospital statistics, including discharge forms that describe the diagnosis and each individual service provided) results in delays in payments of the DRG-component to hospitals – by as much as a month or two. A major factor as cited in the pilot review is that SHIF staff

do not have the clinical qualifications/capacity to correctly evaluate the services provided by health facilities under DRGs. (3) Scaling-up of digitization necessary to facilitate the effective flow of information to support strategic purchasing and performance monitoring has not been successfully implemented. This has also contributed to delays in payments to hospitals.

The pilot has unveiled some critical capacity constraints in the health system among which chronic underfunding of the health system is a prominent one.

### **Infrastructure and competency gaps at the primary care level limits the capacity to fully provide primary care services and creates incentives for unnecessary use of higher levels of care**

A major source of inefficiency in the public health system is the use of secondary and tertiary level facilities for cases that can be treated at the primary care level. An important driver of this issue is the **limited competency and infrastructure at the primary care level**. In many instances basic equipment and medicines that should be found in primary care facilities are not available. For example, there is limited coverage of medicines for chronic conditions such as diabetes, hypertension and asthma. In addition, the training and competency levels of doctors at the primary care level is generally low and does not meet international standards. This has two effects. The first is the unnecessary referral of cases to higher and more costly levels of care that could be treated at the primary care level at a much lower cost. The second is that patients appear to have less confidence in primary care services and therefore prefer to go to higher level facilities to obtain basic healthcare. In addition, the **referral system is not sufficiently enforced**.

Also, at the Oblast and Republican levels, there are inefficiencies resulting from the **fragmentation of services**. Many hospitals at these levels are specialized facilities (e.g., children's hospitals, hospitals treating sexually transmitted and dermatological diseases, neurological and psychiatric hospitals, etc.). This arrangement precludes an integrated and more efficient approach to the delivery of hospital health services. This also causes additional access barriers to patients with co-morbidities who have to visit multiple facilities. It is important to also note that public health expenditure is partial to hospital services. In 2019, 54 percent of the health budget was accounted for by hospital services, and 26 percent by primary outpatient care services. This is in a context where non-communicable (lifestyle) diseases are the main drivers of mortality and morbidity.

### **Low salary levels adversely affect the capacity of the public sector to effectively and efficiently deliver quality healthcare services**

Salary levels for health professionals in the public sector is quite low. In fact, salary levels in the health sector are one of the lowest in comparison with other sectors of the economy<sup>20</sup>. The average salary for a doctor is in the region of US\$ 200-300. In the private sector, based on anecdotal evidence, average income for doctors is several times this level. As a result, it is difficult to attract younger and highly qualified health personnel into the public health sector, as they are drawn to the higher paying private sector, as well as other sectors of the economy. This challenge to attract highly qualified health personnel reduces the capacity of health workforce to deliver quality health care. The effect of this problem is **more acute in the primary care setting** where there are no legal opportunities for doctors to earn additional wages from direct payments – as is the case for doctors in regional and republican level facilities. Anecdotal evidence indicates that doctors in Oblast and Republican hospitals may earn up to \$2,000 a month (about seven to ten times the salaries of doctors in primary care), through hospital revenues from direct payments outside the benefits package (and informal payments). Also, data from stakeholder interviews indicate that low salary levels of health personnel results in low motivation/morale and adversely affects productivity.

<sup>20</sup> <https://stat.uz/uz/matbuot-markazi/go-mita-yangiliklar/10474-yuridik-shaxs-maqomiga-ega-bo-lgan-korxonava-tashkilotlarda-ishlovchi-xodimlarning-o-rtacha-oylik-nominal-hisoblangan-ish-haqi-2021-yil-yanvar-mart-2>

Inability to attract highly qualified doctors at the primary care level further compounds the competency challenges already experienced at primary care facilities.

### **Lack of pooling of public funds results in inequities and inequalities in health expenditure**

An important objective for health financing is to achieve fairness in the distribution of health resources, and to provide financial protection to the most socio-economically vulnerable. This is to ensure that members of the population are not disadvantaged from accessing and utilizing health services based on their geographic location or their levels of income. In Uzbekistan, government health expenditure is sourced from tax revenue at the national, regional and district/city levels; and pooled at these three levels as well. In effect, there is one pool at the national level, 14 pools at regional level, and a pool for each district/city within regions. Nevertheless, a centrally-defined national health budget, sets the basis for allocations to health by regions and districts. Under this current arrangement, there is little scope for income cross subsidization between regions; from those with higher tax revenue to lower tax revenue. Health financing in each region and district depends on the size of local tax revenue, and engagement between health and treasury departments [2]. It is important to note that the government has a mechanism for promoting equity in resource allocation. This is through intergovernmental transfers from the national budget to local health. Despite these, there are significant variations in per capita health expenditure across regions. **For example, in 2019 government expenditure per capita was 284,000 Soms in the Samarkand region and 474,000 Soms in the Syrdarya region.** Analysis of regional health expenditure indicates that there has been an improvement in redressing inequity between regions.<sup>21</sup> Also, regional differences in expenditure are not associated with the level of unmet needs in regions. The government is in the process of establishing a Mandatory Health Insurance Scheme, entirely funded through tax revenue. Already, a State Health Insurance Fund (SHIF) has been established and is being piloted in the Syrdarya region. Funds for specialized tertiary care services provided to Republican hospitals have been pooled at the SHIF. It is envisaged that funds for all personal health services, from primary care to the highest level, will be pooled under the SHIF. This will facilitate better cross subsidization across regions and promote shifts in health expenditure to better respond to health needs, and also promote financial protection.

### **Recommendations and actions**

**A vision of the future:** The envisaged future of the health financing is encapsulated in the Presidential Decree No. 5590., which among other objectives, seeks to reform the financing and organization of the health system to increase efficiency and progress towards equal access to health services, financial protection, and equity in financing. Ultimately it is to achieve Universal Health Care, which is for all people in the population to have access to health services they need, when they need them, without financial hardship – regardless of income levels or geographic location.

Recommendations to address the health financing challenges for the Uzbekistan Health System Strategy 2030 focus on sustainably generating additional financial resources for health, promote financial protection, create financial incentives for strengthening the health system and promote efficiency in the use of available resources. Some recommendations made are to avoid certain actions under consideration by the Ministry of Health.

### **TO REALISE THIS VISION THE MOH NEEDS TO:**

1. Translate the priority placed on the health sector into the budgeting process. This has to be sustained in the long-term in order to achieve Universal Health Coverage
2. Prioritize PHC services

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<sup>21</sup> This is based on comparison of incidence of poverty in regions and per-capita health spending from 2015 to 2019.

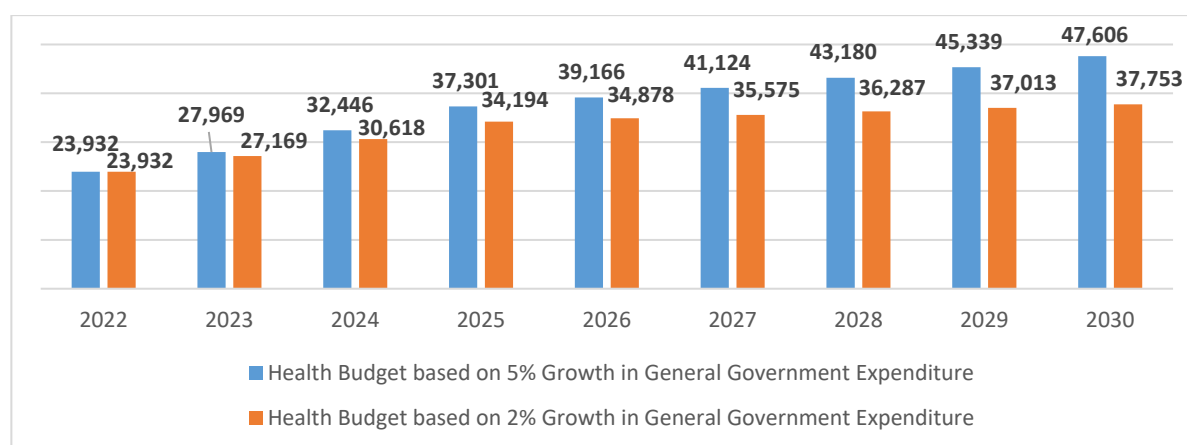
3. Adopt a more systematic and strategic approach to paying for health services in both the public and private sector, with clear rationale and objectives, to ensure efficiency in the use of resources
4. Strengthen management and technical capacity at all levels of the health system
5. Invest in information systems and analytical capacity necessary for developing evidence-based policies

The following eleven (11) recommendations relate directly to the underpinning objectives outlined above.

**Continue with current government policy target of allocating 15 percent of total general government expenditure to the health sector by 2025; and maintain this target until 2030 (1)**

The high annual growth in total government health expenditure experienced from 2016 to 2021 is unlikely to be sustained going forward. Two modest average annual growth scenarios (2 percent and 5 percent) are considered for total government expenditure for the period 2023 to 2030. Based on these scenarios, government health expenditure should increase by an additional 13.8 trillion to 23.6 trillion<sup>22</sup> UZS by 2030 (in 2022 prices), if the target of allocating 15 percent of government expenditure to the health sector is achieved. The assessment of whether the additional financing would be sufficient to provide full coverage for all proposed reform actions is not possible without detailed bottom-up costing, which has not been undertaken as part of this exercise (due to time and resource constraints), which only used either back-of-the-envelope estimates or expert opinion.

**Figure 2: Forecasted increase in health expenditure (high and low estimates)**



At 15 percent of total government expenditure, it may be challenging to further increase the share of the budget that goes to health. This is the basis for the recommendation to maintain this level until 2030. With a positive economic forecast, the amount of resources committed to the health sector should continue to increase even where the share of total expenditure remains fixed. From 2000 to 2020, an average GDP growth rate of Uzbekistan was 6.3 percent.<sup>23</sup> This period of consistent growth has afforded an upward trend in overall government expenditure. Despite the downturn in the economy caused by the Covid-19 pandemic, the economy is expected to rebound, with a GDP growth forecast of 4.5 percent in 2022.<sup>24</sup> Although the MoH does not directly determine the budget, it can support its case for maintaining the 15 percent target for expenditure on health by providing evidence of the direct and broader socio-economic benefits of sustaining high levels of investment in the health sector. This will be critical in engaging with MoF and other budget stakeholders in the decision-making process for allocations to the health sector.

<sup>22</sup> Based on 10 percent to 15 percent annual increase in total government expenditure.

<sup>23</sup> World Bank Development Indicators 2022

<sup>24</sup> ADB, GDP Growth, Asian Development Outlook Update 2021, Asian Development Bank.

### Specific actions:

- ✓ Develop an investment case for the health sector that provides evidence of the benefits of additional allocations to the health sector.

### **Additional income related contributions to health insurance such as payroll taxes should not be implemented given recent fiscal reforms (2)**

There are at least four strong reasons for this recommendation. First, imposing contributions for a mandatory insurance scheme will effectively increase the tax burden on employers and employees, which will be inconsistent with the intended effects of the recent tax reform, and therefore, is unlikely to be acceptable/appealing to the Government. Fiscal reform from 2017 to 2019 simplified the tax system and reduced the tax burden on personal income and firms. This has had the desired effect of increasing the formalization of employment, increasing the tax base, increasing tax registration and compliance, and creating incentives for growth in firms and investment. Ultimately, this led to an increase in overall tax revenue. The possible use of payroll taxes to raise revenue can be considered from 2030, following an assessment of progress in enabling macro-economic and fiscal conditions.

It is also important to note that additional revenue from payroll-taxes will be relatively small in comparison with overall health expenditure from tax revenue. Analysis by WHO shows that additional revenue from payroll tax revenue is quite small<sup>25</sup> relative to additional revenue from prioritization of the health sector in the budgeting process. Additional per-capita revenue through pay-roll taxes by 2025 is estimated to be between UZS 35,000 and UZS 52,000 per annum. Additional financing through prioritization of the health sector is estimated to be 10 times higher.

Thirdly, international experience shows that earmarking taxes for health can result in short-term increases in finances for health. In the medium to long-term overall level of health expenditure as a proportion of government expenditure often fell back to the levels before the earmarking - a result of reduced prioritization of the health sector in budgetary allocations from non-earmarked tax revenue. This was the case for Ghana with 2.5 percentage points of Value Added Tax earmarked for health. In Estonia, earmarked payroll tax has created a perception of a tight link between contributions and benefits; as a result, general revenue financing has not been a policy priority. A similar phenomenon was observed in Gabon with an earmarked tax on mobile phone company revenues.<sup>26</sup>

Finally, international evidence indicates that there is significant difficulty in implementing mandatory contributions for health insurance (especially through pay-roll taxes) where a large proportion of the employed are operating in the informal sector. In Uzbekistan, there is a high level of informal employment (58 percent). As an example, Kazakhstan discontinued mandatory health insurance in 1998, partly because of revenue shortfalls. A contributing factor was that a quarter of the population were in the informal sector (self-employed and small farmers) and many of them did not pay health insurance contributions.<sup>27</sup>

### Specific actions:

- ✓ No action required. Consideration for use of payroll taxes can be revisited once the context described above will be different and enabling implementation of contributory social health insurance

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<sup>25</sup> Analysis by WHO shows that additional financing due to payroll tax revenue is quite small; ranging from 5.4percent to 7.7percent of total funds for health [with 2percent to 4percent payroll tax, and half (0.5) to full official monthly minimum salary per individual entrepreneur for informally employed]

<sup>26</sup> C. Cashin, S. Sparkes and D. Bloom, "Earmarking for health: from theory to practice," World Health Organization, Geneva, 2017.

<sup>27</sup> A. Katsaga, M. Kulzhanov, M. Karanikolos and B. Rechel, "Kazakhstan: Health Systems in Review," Health Systems in Transition, vol. 14, pp. 1-154, 2012

### **Detailed analysis of the broader implications of additional taxes on products such as tobacco, alcohol and sugar-sweetened beverages should be carried out before they are considered for raising revenue (3)**

The amount of revenue that can be generated from these taxes depends on the magnitude of the increase in taxes and the level of consumption of the product in the economy. Often these taxes have been imposed for direct health benefits given their effectiveness in reducing the demand and consumption of the product. Consideration for financing health through additional taxes must include an in-depth assessment of the broader fiscal and socio-economic implications. For example, additional taxes can have implications for: the creation of 'black markets', changes in the labour market, etc. Also earmarked taxes introduce rigidities in the budgeting process.

#### **Specific Actions**

- ✓ Conduct analysis of effect of increasing taxes on tobacco, alcohol and sugar-sweetened beverages.

### **Reduce Out-of-Pocket payment in the Benefit Package, starting with PHC services (4)**

Fully funding the current benefit package will address the challenge of patients having to pay directly for state-guaranteed benefit package, and this will significantly reduce households' OOP spending and impoverishment due to catastrophic health expenditure. To achieve this, the full complement of staffing for PHC needs to be funded, including all the necessary medicines, diagnostics, and other supplies. There are staffing norms for PHC to guide human resource financing, but there is no information on the funding gap for supplies such as medicines and diagnostics. This needs to be estimated. Considering potential budget limitations, a phased approach is recommended. This will start with fully financing services for 20 health states and conditions that make up to 40 percent of outpatient primary care visits<sup>28</sup> over the first three years (2023-2025), followed by 10 inpatient conditions at the district hospital level. These are referred to as high-impact services. Subsequently, the entire state-guaranteed benefit package will be fully financed by 2030. Examples of high-impact services are those for treating and managing diseases such as diabetes, hypertension and cardiovascular diseases. This will include medicines and supplies necessary for lab tests and treatment. During the costing exercise, data to be collected routinely for monitoring the changing cost of delivering the benefit package will be identified, to inform policy. In addition, this process will identify where there are gaps in infrastructure that could preclude the effective use of additional resources in delivering quality healthcare.

#### **Specific Actions**

- ✓ Estimate funding gap for medical supplies (medicines, diagnostics, etc.) for the state-guaranteed benefit package – prioritizing funding gap for care of high-impact prevalent 20 outpatient and 10 inpatient PHC health states and conditions.
- ✓ Fully finance supplies (medicines, diagnostics, etc.) for the PHC benefit package in a phased approach starting with those for high-impact prevalent 20 outpatient and 10 inpatient PHC health states and conditions.
- ✓ Negotiate increase in PHC budget with Ministry of Finance based on financing gaps for medical supplies to include the increase in the Law on Budget.

### **Systematically increase salaries of doctors and nurses in the PHC setting (5)**

Starting salaries for doctors in primary care is approximately US\$240; the average salary of nurses is around \$135. Salary increases will improve the ability of the public sector to attract and keep highly

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<sup>28</sup> This is in line with international experience. For example in Australia 20 health conditions were responsible for 42.1percent of visits to primary care facilities (Britt, et al., 2015).

qualified professionals, strengthen PHC service delivery capacity, and increase motivation of health personnel. This will also reduce unnecessary admissions to higher level hospitals. The target is to ensure that the base salary of PHC doctors is no less than the twice the national average salary in the country as reported by the State Statistics Committee, and the salary level of PHC nurses no less than the national average salary, which is about twice the current level. For nurses not interfacing patients (an IT nurse), a factor of 1.5 can be applied. These increases are to be gradually implemented over 3 to 5 years. The focus on PHC doctors is because the regulation does not allow for OOP payments for PHC services, which is a source of additional revenue for doctors in non-PHC settings. The proposed model of salary increases ensures that non-salary expenditure is not crowded out by salary increases.

### **Specific Actions**

- ✓ Fully finance increase in salaries for PHC doctors and nurses by 2025

### **Introduce financial incentives to improve quality of care (6)**

Three key incentive schemes are proposed to promote: (1) clinical competence of health workers (2) collection and use of clinical data (3) integration of service delivery. For the first initiative, increased basic salaries will be made to those who successfully pass either continuing professional training (online and/or hybrid, designed with support from international practicing practitioners) in the diagnosis and management of 20 outpatient and 10 inpatient priority PHC health states and conditions or international exams such as International Foundations of Medicine (IFOM) examinations. This initiative is to encourage continued education and capacity development of health professionals and improvement of quality of health service delivery and prioritize high-impact prevalent conditions.

For the second initiative, it is recommended that financial incentives should be put in place to encourage the collection and submission of data necessary for monitoring quality of care. A bonus system is suggested because of the significant time and effort required to collect and submit data. This system will apply to all levels of care. Data from primary care will include information such as administrative visit specific data and 'completion and submission of chronic disease management flowsheets at each encounter. This process provides an initial assessment of the performance of each facility without creating any incentive for facilities to "game" the system. Analysis of data from facilities can guide the appropriate development of other mechanisms for improving performance in the medium-term, by identifying aspects of health service delivery, and facilities that require improvement. In addition, this information will be important for planning changes in the distribution of human resources in response to relative need (geographically and across levels of care), to improve efficiency in the use of human resources. This is critical in order for the introduction of strategic purchasing initiative to have any significant impact, as human resources account for most of health expenditure in Uzbekistan. For example, more than 90 percent of primary care level budgets are accounted for by salaries. However, this initiative can be designed and implemented only after a robust information system is in place and transition to new provider payment mechanisms is in an advanced stage.

The third incentive scheme recommended is to make additional payments to doctors for provider-to-provider tele-consultations that are initiated by primary care physicians. This is to incentivize doctors at higher-level facilities (multi-profile polyclinics, regional hospitals, and specialized centers) to provide clinical support to primary care physicians. These consultations can be reimbursed by SHIF as office visits. These consultations can be done remotely using the telephone, Telegram, WhatsApp or other video conferencing applications such as Zoom and Google Meet. It is recommended that this incentive scheme be phased in, starting with multi-profile polyclinics. International experience of electronic provider-to-provider consultations in North America and countries such as Spain, Netherlands, Australia and Spain

indicate that it has positive impacts on access to specialty care, and reduction in cost of care, given appropriate control to minimize gaming.<sup>29</sup>

### **Specific Actions**

- ✓ Introduce bonus payment scheme for health professionals for continued education.
- ✓ Introduce payment system for provider-to-provider consultations.
- ✓ Introduce 'pay-for-data' bonus scheme.

### **Avoid implementation of pay-for-performance systems for improving quality of health services (7)**

International evidence shows that there is limited empirical evidence of impact on the quality of care of performance-based financing.<sup>30</sup> In addition, the use of payment-for-performance in health care can lead to unintended adverse consequences for the quality of care delivered and access to care for high-risk populations - that require more intensive care, with higher risk of undesired outcomes – as observed in Canada.<sup>31</sup> Improvement around availability of quality data and human resource capacity development are currently more critical for the Uzbekistan context. Once reliable data is regularly available from health facilities, assessment of performance can be conducted to identify areas of focus for improving quality and efficiency. Context appropriate strategies to address these challenges can then be developed based on the nature of the challenges identified.

### **Specific Actions**

- ✓ Revision of on-going initiative to improve quality of care using financial incentives as outlined in the Presidential Decree No. 21532 to focus on improving availability and use of quality-of-care data

### **Strengthen health system capacity to ensure efficiency and effectiveness of the provider payment reforms (8)**

With the introduction of strategic purchasing such as the use of DRGs it is critical that hospital management and staff of the SHIF be trained sufficiently to manage the system. The pilot in Syrdarya highlighted the lack of capacity at these levels and this gap must be addresses in order for new provider payment mechanisms to generate the intended efficiency gains.

### **Specific Actions**

- ✓ Conduct training of Oblast level hospital management and SHIF staff on the use of DRGs

### **Introduce DRG payment system at Oblast level for both government and patient funded hospital (9)**

It is recommended that DRGs be used (as a blended payment model) to pay for both in-patient and out-patient (including consultations and day-care procedures) services at Oblast level facilities. The use of DRGs for government funded services at Oblast level facilities is to move away from the solely input-based budgeting system to a one that links payment to outputs – that creates incentives for efficiency and

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<sup>29</sup> C. Liddy, I. Moroz, A. Mihan, N. Nawar and E. Keely, "A systematic review of asynchronous, provider-to-provider, electronic consultation services to improve access to specialty care available worldwide," *Telemedicine and e-Health*, vol. 25, no. 3, pp. 184-198, 2019

<sup>30</sup> Paul, L. Albert, B. N. Bisala, Bodson and e. al., "Performance-based financing in low-income and middle-income countries: isn't it time for a rethink?," *BMJ Global Health*, vol. 3, no. e000664. doi:10.1136, 2018.

<sup>31</sup> K. Kyeremanteng, R. Robidoux, G. D'Egidio, S. M. Fernando and D. Neilpovitz, "An analysis of pay-for-performance schemes and their potential impacts on health systems and outcomes for patients," *Critical Care Research and Practice*, 2019

<sup>32</sup> Presidential Decree no. PP-215 of 25 April 2022: On additional measures to bring primary health care closer to the population and improve the efficiency of medical services.

productivity. For patient-funded services, a fee-for-service system is currently used. Transitioning to DRGs will address the potential for over-servicing, thereby reducing cost of care and OOP.

For government funded services, a phased approach to implementation of DRGs as in the Syrdarya pilot is recommended – with 59 diagnosis groups for inpatient services. A new set of diagnosis groups for out-patient services will be created. Payment for Oblast level hospitals can start initially with a mix of DRGs and Global budgets. At the initial stage 10 percent of payments can be in the form of DRGs, with the remaining 90 percent of the budget allocated to hospitals on the basis of prevailing historical budgeting. This is to avoid large budget shortfalls for the least efficient hospitals. In the case of patient-financed health services, tariffs should be based on DRG rates solely. This should be designed to cover the full cost of care relating to the diagnosis.

DRGs can be used to discourage unnecessary admissions. Only diagnosis groups that require admissions will be paid as in-patient treatment. In order to enforce this, a monitoring system will be put in place to ensure adherence and discourage up-coding and DRG creep.

### **Specific Actions**

- ✓ Extend the use of DRG-based payment to hospital services at Oblast level - for government funded services & patient funded services

### **Introduce a strategic framework for government purchasing of private sector capacity (10)**

See Private Sector Block for specific actions

### **Fully establish a strategic planning unit within the Ministry of Health by 2030 (11)**

This strategic planning unit will have capacity in health economics and financing, epidemiology, planning and strategy development, and statistics. Its role will include health systems research to assess health system performance and international best practices, identify bottlenecks and challenges in the system, generate evidence for policy, generate and maintain databases of key health system indicators, and support MoH in policy and strategy development. This unit will also collaborate with other health institutions such as Institutes of Public Health or have funds to commission analytics or research from public and private institutions. The SPU will be the key contact point for technical engagement with development partners.

### **Specific Actions**

- ✓ Establish and staff the Strategic Planning Unit

### **The State Health Insurance Fund – as an agency - should be established as national entity with a Supervisory Board chaired by the Minister of Health (12)**

The Supervisory Board should be comprised of representatives of MoH, MoF, Office of the President, Cabinet of Ministers, Antimonopoly Committee, technical specialists (e.g., health financing specialist), and representatives of Civil Society. There are debates at the policy level around the ideal 'positioning of the SHIF. Whether it should operate under the MoH or to be independent of any ministry. There is no strong evidence to support an ideal accountability structure. The proposed governance structure is to give the MoH some oversight in the operations of the SHIF. However, the eventual structure adopted should consider the political context of Uzbekistan.

It is also recommended that the name of the State Health Insurance Fund be changed. Given that it is fully finance by tax revenue, it is actually not an insurance system. In order for the name to correctly reflect the nature of the system it could be rename to State Health Fund (for example).

## **Specific Actions**

- ✓ High-level deliberation between MoH, MoF and Presidency on the appropriate positioning and naming of the SHIF (perhaps to “State Health Fund”).

## PAPER 3: Quality of care

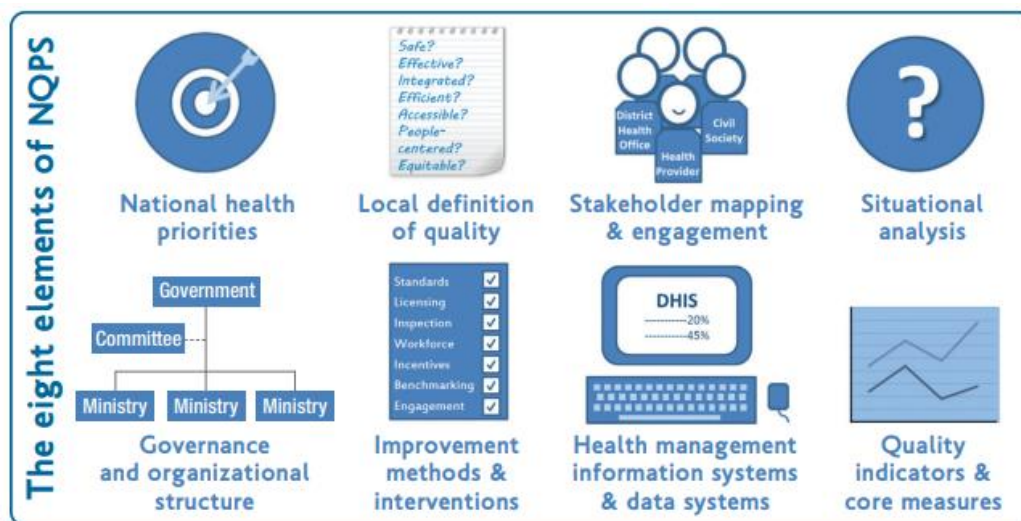
### Introduction

Management of quality is widely recognized as a critical component in the strengthening of health systems worldwide. Human resources, facilities and equipment, supply chains of drugs and materials, health system financing and ensuring universal health coverage all represent core assets required within any health system. Recommendations to strengthen these areas are covered in other blocks of this plan. Quality, however, examines the extent to which these elements function well in a coordinated and systematic fashion, in order to ensure optimal delivery of health services and best possible results for patients.

This block on quality of care proposes for the national health system strategy the key objective of improving quality across its key dimensions: effectiveness (optimal adoption of best practices), efficiency (reduction of waste), safety (avoidance of harm), patient experience (good communication, respect, responsiveness, and engagement in decisions) and equity (ensuring good quality regardless of income, gender, rural-urban status or ethnic group).

This paper also examines key activities necessary for managing quality, such as strong quality measurement, quality planning, oversight of quality and knowledge and use of quality improvement methods. The elements of the WHO's National Quality Policy & Strategy (NQPS) framework was used for this analysis (see Figure 1).

Figure 1: Eight Elements of the WHO National Quality Policy Strategy



### Situation analysis

The situational analysis is based on review of documents, site visits and interviews conducted during a mission from May 8 to 15th, 2022 and on a virtual basis from March to May 2022. Documents included government decrees, reports, academic studies and media reports. Site visits included primary care centers, secondary hospitals, Republican Centers for different medical specialties and other specialized facilities. A small number of charts were reviewed, for common conditions such as hypertension, diabetes, acute myocardial infarction, stroke and prenatal care. Interviews were conducted with staff in the above site visits as well as Ministry of Health officials, arms-length organizations (e.g., IT-Med) and training centers. The analysis was also developed with input from a working group on quality of care including clinical leaders, Ministry of Health and representatives from international organizations.

The situational analysis presents observations regarding the quality of patient care, classified according to the dimensions of quality, in addition to an analysis of the components of the health system required for managing quality effectively, such as planning functions; health information and quality indicators; governance of quality; and most importantly, skills and knowledge among staff and managers on how to manage quality.

### **Quality of care dimensions**

#### **Effectiveness**

There are numerous clinical practice guidelines, but the adoption of best practices is unknown and suspected to be at least as low as in other LMIC countries (about 50 percent). Clinical practice guidelines describe the recommended drugs, treatments, tests, procedures and other services for a particular disease which have been proven to be effective in randomized controlled trials and other studies. Past World Bank-financed projects in the “Health 3” project attempted to introduce evidence-based approaches to the development of clinical practice guidelines<sup>33</sup>, using modern instruments such as the AGREE tool to ensure guidelines are based on latest clinical evidence. At present, a wide range of guidelines exists on the Ministry of Health’s website. A review of these guidelines suggests that while they do not appear to follow international standards for referencing and evaluating clinical evidence, they for the most part cover common clinical practices for management of major diseases.

The more serious problem is with regards to adherence to the guidelines. There was no readily available information on actual rate of adoption of best practices, in either official documents or during site visits. For example, health facilities were not able to supply information on basic statistics such as percentage of patients who have attained targets for control of blood sugar or blood pressure.

During site visits, a limited number of chart reviews were conducted which revealed examples of suboptimal care, such as patients with diabetes and hypertension not receiving sufficiently drug management to achieve control of their conditions. We caution that this was not a random, representative sample of patients. Data, however, do exist from the STEPS survey conducted in 2019, which shed some light on best practice adoption.<sup>34</sup> Screening for non-communicable diseases is poor. Among adults aged 45 to 69 years, 33,7 percent had never had their blood pressure measured, and 63,8 percent had never been tested for blood glucose. Among adults aged 45 to 69 previously diagnosed with hypertension, 6,1 percent were not on medications at all; 35 percent were on medications but blood pressure was not adequately controlled, and 23 percent were on medications with adequate blood pressure control.<sup>35</sup> Only 19 percent of women aged 30-49 had been screened at least once in their lifetime for cervical cancer.<sup>36</sup> Regarding health behaviors, there are major areas for improvement: 23.5 percent of adults are obese, 26,1 percent have inadequate physical activity and 32,9 percent of adult men are tobacco users (smoking and smokeless).

Worldwide, it is estimated that guidelines are not followed in primary care 50 percent of the time, especially in low-and middle-income settings.<sup>37</sup> This may occur if physicians and other providers are not aware of latest guidelines, or simply forget to follow them, or feel too busy or rushed to review all recommendations regularly with patients. In light of the observations above, it is reasonable to assume

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<sup>33</sup> Projects (worldbank.org)

<sup>34</sup> Prevalence of risk factors for non-communicable diseases in the Republic of Uzbekistan. WHO STEPS 2019. World Health Organization, Tashkent, 2022. Available at: <https://ssv.uz/ru/documentation/rasprostranennost-faktorov-riska-neinfektsionnyh-zabolevanij-v-respublike-uzbekistan>

<sup>35</sup> Derived from 2019 STEPS survey, Table 106, third line, examining information only for those aged 45-69 with previously diagnosed hypertension.

<sup>36</sup> Section 3: Report Templates (who.int)

<sup>37</sup> Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Glob Health* 2018;6(11):e1196–e1252

that problems with the adoption of best practices are comparable to those of other countries, if not worse.

Although there is little data on the actual rate of adoption of best practices, there are indications of government interest in improving both screening and management of major diseases. Resolution of the President 2857, dated March 2019, describes measures to improve the organizations of activities of primary health care institutions, in both rural medical centers (SVPs) and urban polyclinics. Item 1 (improving the regulatory framework), point 11 calls for “development and updating of clinical protocols (algorithms) for the diagnosis, treatment and rehabilitation of major diseases.” Item 2 calls for improving quality of primary health care, through developing modern methods of prevention, early detection, diagnosis and treatment of diseases.

### Efficiency

Human resources are wasted through excess documentation and assessments and carrying out tasks not requiring the provider’s level of training. Efficiency refers to waste, or use of unnecessary resources to deliver a particular service. We observed or heard of multiple examples of such waste. First, multiple interviewees described documentation time accounting for 2/3 of the workday, including time to respond to requests from rayon or oblast departments of the Ministry, for ad hoc reports or administering surveys. Interviewees also noted duplicate documentation in both paper and EMR charts as required by law. These issues with documentation were noted at all levels of care.

Within primary care, we observed that patients with stable non-communicable diseases were automatically seen monthly unnecessarily, instead of at longer intervals. We also observed inefficient use of nurses’ time; typically, two nurses stand by during the doctor’s assessment of the patient during a clinic visit, awaiting instructions. This time could instead be used to carry out clinical tasks independent of the doctor (e.g., lifestyle counselling, foot care, etc.). At the level of hospital care, many examples of inappropriate admissions were observed, such as adjustment of insulin dose, or simply because the patient wanted a place to rest. Interviewees also noted that hospitalizations took place for periodic confirmation of disability status as required by law; this practice, however, is intended to be phased out according to a recent Prikaz.<sup>38</sup> We also heard numerous anecdotes of patients presenting to a higher level of care than necessary (e.g. seeking care at a tertiary-level center rather than a local, secondary hospital).

At present there is little data regarding the extent to which inappropriate ordering of tests, medical procedures or surgeries. Preliminary discussions with some stakeholders, however, suggest that this is a concern, particularly among private health care providers operating under less regulatory oversight who may be promoting use of expensive technologies.

### Access

There are major access problems due to lack of universal coverage or inconvenient or poor organization of services. This results in patients either foregoing a service or having to wait excessively long for the service.

For most surgical, diagnostic and therapeutic procedures, there is no public funding unless patients meet certain criteria (e.g., level 1 or 2 disability, non-working retirees, children) and are referred. Thus, patients earning low salaries may not be able to afford such services. Some services are not offered for free at all, such as colon cancer screening.

We also heard of instances where the organization of services or the standard process created barriers to care. In primary care, for example, some services can be accessed only in certain settings. Glycosylated

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<sup>38</sup> Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on approval of normative legal acts on the organizational structure and organization of medical and social expertise (number 62). Government of Uzbekistan, Tashkent, 8 February 2022

hemoglobin or lipid tests are only available in multi-profile polyclinics, and patients living in rural areas need to travel to obtain these tests. In the case of mammography, the service is only available after a breast lump is found; however, this will result in cancers being detected at a later stage.

Regarding timely access, there are examples of delays for emergency services leading to suboptimal outcomes.

We heard of instances of delays for emergency services leading to suboptimal outcomes. For example, door to balloon/needle time for acute myocardial infarction or stroke time is too long (6 hours), even in the Republican Center for Emergency Medicine. International guidelines recommend that these services be performed ideally within 90 minutes. For general surgery, wait times are usually short (e.g. under 2 weeks) because access has already been restricted. However, some services such as pediatric cardiac surgery were reported to have longer waits due to staffing limitations.

### Patient experience and safety

Patient experience is suspected to be poor, but there is no data to assess this objectively. One study of nine countries of the former Soviet Union<sup>39</sup> reveals that only 41 percent of patients were satisfied with their care, with communication cited as one of the gaps in care. While this study did not include Uzbekistan, the structure and work environment of these health systems is similar, and it is likely that similar issues exist in the country.

According to the 2014 Uzbekistan Health Systems in Transition report<sup>40</sup>, there were no systematic activities to measure user experiences on a continuous basis, and hence little data on the extent to which communication problems exist. Site visits and interviews suggest that little has changed since this study. Some sites stated that they collect their own surveys, but these tools are not standardized nor are results made available to the public. There is a pilot project in six facilities to collect internationally standardized data (HCAHPS), but these data are not yet available. Private facilities are required to post a QR code where patients can submit comments or complaints, but this does not constitute a true patient survey.

Patient safety incidents have recently been widely reported in the media, but systematic data on safety are largely unavailable. Avoidable adverse events due to medical error occur frequently in healthcare. Hospitals are especially prone to these events, due to the complex nature of the care delivered. Even in high-income countries, it is estimated that one in 10 patients is harmed while in hospital and half of these cases are due to avoidable adverse events.<sup>41</sup>

At present, there are no data on patient safety, and no information on how frequently adverse events due to healthcare occur. For example, there are no nation-wide data on surgical complications, medication errors, falls or pressure ulcers. Hospitals do report nosocomial infections, but many interviews expressed concern about undercounting. We were unable to obtain summary statistics on these infections.

Of note are recent media reports of safety incidents, including a postpartum mother who died from a misdiagnosed uterine infection<sup>42</sup>; and the death of a pregnant mother and child at a maternity hospital.<sup>43</sup> In both cases, the doctor was subject to a criminal investigation, convicted and sent to prison. Thus, there has been some interest in safety among the public.

The Ministry has also expressed some interest in improving patient safety. Presidential decree 5590 (December 2018) on Health System Development for 2019-2025 calls for an increase in “percentage of

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<sup>39</sup> Public satisfaction as a measure of health system performance: A study of nine countries in the former Soviet Union (Ishtm.ac.uk)

<sup>40</sup> Health systems in transition: Uzbekistan (who.int)

<sup>41</sup> Patient Safety (who.int)

<sup>42</sup> Из-за халатности врача в Самарканде погибла роженица. Чтобы избежать ответственности, медик пыталась подделывать документы (podrobno.uz)

<sup>43</sup> UzNews - 33-летняя мать и её ребенок умерли во время родов: против врачей возбуждено уголовное дело

hospitals implementing at least 10 'patient safety packages' from zero to 50 percent over this time period to minimize hospital infections and unforeseen events.

### Quality improvement system components

#### Quality indicators

There is a near-total absence of data on quality indicators. Quality indicators describe the extent to which patients received a beneficial service or a desired level of quality of the service. In most cases, they are expressed as a percentage with the denominator being a target population and the numerator being the number of people receiving the desired level of quality. Examples include percentage of diabetes patients achieving good blood control, or percentage of such patients receiving a recommended test such as glycosylated hemoglobin in the last six months.

The information provided during site visits was almost always information on utilization, such as the number of patient visits, hospitalizations, or surgeries. There was no information about the size of the target population (i.e., denominator), and the utilization measure by itself was not useful because it was not clear whether the service was appropriate or not.

The absence of indicator data has numerous implications. There is no information to set local priorities on where to improve. It is impossible to set targets for improvement, and impossible to monitor progress over time. Oversight and governance of quality cannot be carried out, because the overseeing body cannot hold a health facility accountable for achieving some desirable result.

Of note is that efforts are underway to develop a set of 12 quality indicators for primary healthcare in the Sirdarya pilot project. However, some of these indicators are utilization statistics rather than true quality indicators. This list should undergo some modification in order to be more useful for quality management.

#### Health information systems

A well-designed health information management system is essential for managing quality. Such a system should be designed to collect data in the most efficient way possible, ensure the data are accurate, and then produce useful analyses about quality for providers, managers and policymakers. Our observations from site visits are as follows:

Many sites still used paper-based documentation which is unstructured, disorganized and time-consuming to complete. This makes it difficult to monitor whether patients have good control of their disease or are receiving all recommended drugs and tests. There is structured documentation for childhood growth monitoring, but the design is inefficient as it is lengthy yet still fails to capture information about development milestone

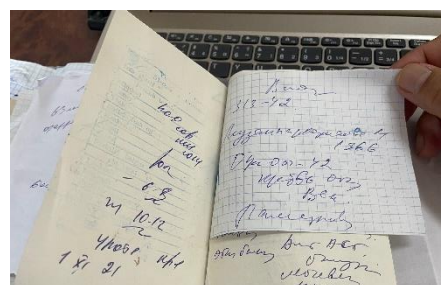


Figure 2: Unstructured documentation

Many republican centers and some primary care sites have information systems, but these are fragmented, focus on scheduling and utilization, and have very limited capability of reporting quality indicators to providers. Many IT systems are designed around a particular subspecialty to promote vertical integration but do not share common data fields or standards between specialties. The systems examined could report number of visits per day but there was very little clinical data available that could be extracted.

Health information systems lack mechanisms to verify data quality. Source data are typically collected manually from the chart and reported to superiors with few verification processes. There was widespread concern from interviewees about poor data quality.

### Governance and quality improvement methods

Regarding governance, there is no quality oversight of private sector. After a simple licensure process, private facilities are not required to be inspected nor submit data on performance. Public facilities report to the rayon or district level of administration. Governance functions for quality cannot be carried out if quality is not measured.

There is a strong culture of punishment for quality problems. The health system relies primarily on inspection for errors and punishment. Maternal and child deaths trigger medico-legal investigations which can lead to fines, suspension or prison, as noted in the two media stories above. Many interviewees felt that punishment was counterproductive and leads to problems being underreported rather than addressed. During site visits, it was observed that younger physicians voiced this opinion more forcefully whereas older staff were more likely to believe that inspection and punishment was the only available method of managing problems.

This culture of punishment appears to be rooted in the former Soviet system of management and is in strong contradiction to modern methods for improving patient safety. The classic publication, “To Err Is Human: Building a Safer Health System” from the Institute of Medicine in the USA, asserts that the problem with patient safety is not bad people in health care—it is that good people are working in bad systems that need to be made safer.<sup>44</sup> Human beings are inherently prone to making mistakes, such as forgetting to carry out a task, misperceiving a situation, or misunderstanding communication. Such problems are compounded when providers are under time pressure, have multiple distractions, have inadequate training, or work in a system with poorly designed or confusing work processes. Punishing individuals who are well-meaning but made a mistake leads to demoralization, removes scarce staff from the workforce, and worst of all, encourages staff to hide problems rather than to fix them.

Modern methods of managing safety focus on building a “just culture” where punishment is reserved only for cases of willful harm or negligence (e.g., abusive behaviors, theft or corruption, truancy from work, deliberate attempt to harm others, sexual misconduct). Individuals who make honest mistakes while attempting to provide care are not punished and certainly not prosecuted. Instead, a root cause analysis is conducted, and the focus is on identifying issues in the design of the system which could be improved. Staff are strongly encouraged or even rewarded for pointing out mistakes, or “near-misses” where a mistake almost occurred but was prevented at the last minute. Healthcare institutions are required to provide full disclosure to patients and their families of any safety incident causing harm and must offer an apology and describe to the patient what actions they will take to prevent such an occurrence.

There is a lack of quality improvement activities and individuals skilled in patient safety or quality management. There were almost no examples of quality improvement projects where teams identified a quality problem, identified root causes, made changes and made a measurable improvement in quality. Most sites did not have staff dedicated to improving quality. There were, however, some examples of hospitals conducting mortality reviews and facilities did report activities to investigate complaints. In the past, there was one important example of a successful quality improvement program. The Assessment Tool for the Quality of Hospital care for Mothers and Newborns (ATQHMN) was used in selected hospitals to conduct a baseline assessment of use of a wide range of best practices such as adequate patient monitoring, active management of labor, infection control, protocols for complications. Through a

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<sup>44</sup> [THE NATIONAL ACADEMIES - To Err is Human - NCBI Bookshelf \(nih.gov\)](#)

participatory process, hospital teams made action plans in response to deficiencies identified and scores improved following reassessment several months later.<sup>45</sup> However, this program was not expanded beyond the initial nine perinatal centers and was not sustained after the conclusion of project funding.

There is both weak patient engagement and strong expectations for inappropriate care. Many interviewees noted that patients are not engaged in managing their own conditions or health behaviors, yet often demand multiple medications, injections or hospitalization for minor cases.

### Recommendations and Actions

In total, eleven (11) key recommendations are presented, regarding 1) improved documentation; 2) quality information; 3) capacity building; and 4) improved coverage.

**Table 1: List of Recommendations and Actions**

Area	Short-term	Medium-term	Long-term	Cost
<b>1 QUALITY INFORMATION</b>				
1.1 Health Information Agency	☒	☒	☒	\$\$\$
1.2 Structured Documentation	☒			\$
1.3 Indicator List	☒			\$
1.4 Essential Reports		☒		\$
1.5 Free Provider's Time	☒			\$
1.6 Patient & Staff Survey	☒	☒		\$\$
1.7 Public Reporting			☒	\$\$
<b>2 QUALITY MANAGEMENT CAPACITY</b>				
2.1 Decision Supports	☒			\$
2.2 Complaints Management	☒			\$
2.3 QI Agency & Campaigns	☒	☒		\$\$
2.4 Mandated QI Teams & Staff	☒	☒	☒	\$\$\$

### **Establish a health information unit or equivalent body within an existing organization (1)**

For collecting quality data from all facilities (public and private), setting standards, verifying data quality, certifying data collectors, generating reports and analyses. This entity would receive clinical data collected by each primary care facility on individual patients at each encounter and also develop a universal discharge abstract template for all hospitalizations. All facilities (public and private, primary care and hospitals) would be required to submit data. It would develop a process for auditing quality of data, and training data collectors. These functions can be placed in a newly created agency or within an existing organization. See Figure 3 on possible terms of reference for such an agency.

**Box: Proposed Functions of Health Information Unit**

1. Maintain list of quality indicators, including:
  - Selection of indicators

<sup>45</sup> Tamburlini G, Yadgarova K, Kamilov A, Bacci A; Maternal and Neonatal Care Quality Improvement Working Group. Improving the quality of maternal and neonatal care: the role of standard based participatory assessments. PLoS One. 2013 Oct 22;8(10):e78282. doi: 10.1371/journal.pone.0078282. PMID: 24167616; PMCID: PMC3805659

- Determination of technical definitions, such as inclusion and exclusion criteria, data sources
  - Cross-referencing of indicators to clinical guidelines
  - Updating indicators as clinical guidelines evolve
  - Establishing a database of meta-data on indicators, which tracks the above information, such as: [Centers for Medicare and Medicaid Services Measures Inventory Tool \(cms.gov\)](https://www.cms.gov/medicare/medicaid-services/qualityofcare/medicare-and-medicaid-services-measures-inventory-tool)
2. Establish standards for all data sets, including definitions for all variables and data submission protocols.
  3. Conduct training and certification for all individuals based in healthcare institutions who are responsible for submitting data.
  4. Manage the collection of data submitted by health care institutions and providers.
  5. Conduct data quality assurance activities. This may include:  
Regular analyses of all incoming data for errors (e.g., missing values; duplicates; implausible dates, age, gender).  
Periodic re-abstraction studies (select sample of charts in a sample of institutions and verify of coding was done appropriately).
  6. Prepare reports for providers and eventually the public on quality of care.

Table 2 lists examples of health information agencies in other countries. Some countries choose to put all of the above functions into a single agency, while others allocate different tasks to different agencies. Some countries place these functions into a department within the Ministry of Health, while others (e.g., Canada) have created a publicly-funded but independent, arms-length institution. Some countries have more complex arrangements; for example, in the USA, data collection and reporting for the publicly-funded Medicare and Medicaid programs is managed by the federal government’s agencies, while data on quality of services provided through health insurance plans are managed by a non-profit organization (NCQA – see Table). Any of these options may be chosen by Uzbekistan, as long as each function has been assigned to a responsible body along with the necessary resources.

**Table 2: Examples of Health Information Agencies in Other Countries**

Agency	Website	Sets data standards	Maintains quality indicator list	Collects, cleans data	Analyses and reports
Canadian Institute for Health Information	<a href="http://cihi.ca">cihi.ca</a>	x	x	x	x
USA - Agency for Healthcare Quality and Research, US Department of Health and Human Services	<a href="https://www.aHRQ.gov">AHRQ Quality Indicators</a>	x	x		x
USA – US Centers for Medicare and Medicaid	<a href="https://www.cms.gov/medicare/medicaid-services/qualityofcare/medicare-and-medicaid-services-measures-inventory-tool">Find Healthcare Providers: Compare Care Near You   Medicare</a>			x	X
USA – National Committee on Quality Assurance	<a href="https://www.ncqa.org">About NCQA - NCQA</a>	x	x	x	x
UK – NHS Data Model and Dictionary Service	<a href="https://digital.nhs.uk/statistics/statistical-work-areas">NHS Data Model and Dictionary Service - NHS Digital</a>	x	x		
NHS Digital NHS England, NHS Improvement, other NHS departments	<a href="https://digital.nhs.uk/statistics/statistical-work-areas">https://digital.nhs.uk Statistics » Statistical work areas (england.nhs.uk)</a>			x	x
Colombia – Oficina de tecnología de la información y la comunicación (OTIC) – Office of Information and Communication Technology,	<a href="https://minalud.gov.co/registro-aplicativos-informacion.pdf">registro-aplicativos-informacion.pdf (minalud.gov.co)</a>	X	x	x	x

### Specific Actions:

- ✓ Designate the organization responsible for housing the Health Information Unit (HIU), establish working group, terms of reference for HIU.
- ✓ Determine budget allocation for HIU; transfer funds.
- ✓ Recruit and hire staff 100 staff, phased in over 3 to 5 years, with advanced training in data management, quality measurement, data analysis.
- ✓ Purchase technical expertise and/or international data standards, protocols, databases, other technical products.

### **Introduce structured documentation templates (2)**

Examples include « flowsheets » for primary care where information is collected in a one-to-two-page template with data fields for key findings (e.g., blood pressure, weight, latest smoking status (see Figure 4). These can be created for the following conditions: prenatal care; infant and childhood monitoring of growth and development; adult screening activities (e.g., hypertension, diabetes, cardiovascular risk assessment, adult vaccinations, screening for breast, cervical and colon cancer); non-communicable diseases (e.g., hypertension, diabetes, ischemic heart disease, congestive heart failure, renal failure, COPD and asthma) and chronic infections (TB, HIV). They centralize information for decision-making, remind the provider of what to do at each visit and decrease documentation time. They also serve as a data entry template for information that needs to be collected in order to calculate quality indicators. With structured documentation, providers still retain the flexibility to add free-hand notes into other sections of the chart to describe issues unique to the patient (e.g., a recent psychosocial crisis contributing to their illness).

Flowsheets have been implemented in multiple Canadian provinces<sup>46,47,48,49</sup> and jurisdictions, states<sup>50,51</sup> and federal departments in USA.<sup>52</sup> In Kazakhstan in a previous World Bank-financed project, flowsheets combined with implementation of a registry and intensive coaching of primary care providers was associated with major improvements in quality.<sup>53</sup> There are variations between countries in the level of detail contained in these flowsheets. It is recommended that working groups for different diseases be established to review options for design and that a prototype for each condition be tested extensively in a small number of sites before the final design is approved.

Furthermore, given that most primary care sites have not yet developed electronic medical records (EMRs), it is recommended that a paper version of flowsheets be developed initially, and at a later date, an electronic version can be created which is embedded into the future EMR.

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<sup>46</sup> FamilyPhysicianDiabetesFlowSheet.pdf (gnb.ca)

<sup>47</sup> Hypertension Detection, Diagnosis and Management - Flowsheet (gov.bc.ca)

<sup>48</sup> O2c-HMP-Visit-Flowsheet-(pdf-fillable)-Quick-Reference.pdf (corhealthontario.ca)

<sup>49</sup> Type of Diabetes: Type 1 Type 2 Other (sma.sk.ca)

<sup>50</sup> Treatment Flow Sheet: Diabetes (state.fl.us)

<sup>51</sup> Iowa Diabetes Care Flowsheet.pdf

<sup>52</sup> Form BP-A689.060, Hypertension Flow Sheet (bop.gov)

<sup>53</sup> Chan BT et al. A programme to improve quality of care for patients with chronic diseases, Kazakhstan. WHO Bulletin 2020; 98(3): 161-9.

**Figure 4: Example of Flowsheet for Hypertension**

**КАРТА НАБЛЮДЕНИЯ ПО ГИПЕРТОНИИ**

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 Пол: \_\_\_\_\_ Дата рождения (день, месяц, год): \_\_\_\_/\_\_\_\_/\_\_\_\_ Рост: \_\_\_\_\_ см

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Целевой АД \_\_\_\_ / \_\_\_\_  
 Целевой ЛПНП \_\_\_\_\_

Дата визита (гггг.мм.дд)	АД	Вес (кг)	Диуретики	ИАПФ/БРА	Бета-блокаторы	БКК	Другие лекарства АД	Была ли связь между уровнем АД во время данного визита	Статин	Аспирин	Не принимает лекарства регулярно?	Только дежурный?	Последняя цель по улучшению образа жизни (диета, потребление соли, упражнения, курение, алкоголь)	Превышена цель давления?	Примечания (общий статус, изменения в лекарствах, другие проблемы)
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<b>Проводить тесты каждые 6-12 месяцев</b>				<b>Образ жизни (запись каждые 6-12 месяцев)</b>			
Дата	ЛПНП	рСКФ	САК	Дата	Курит?	Кол-во порций алкоголя в неделю	Упражнения: вид, длительность, регулярность
					<input type="checkbox"/> да <input type="checkbox"/> нет		
					<input type="checkbox"/> да <input type="checkbox"/> нет		
					<input type="checkbox"/> да <input type="checkbox"/> нет		

ИАПФ = ингибиторы ангиотензин превращающего фермента БРА = блокаторы рецепторов ангиотензина-1  
 БКК = блокаторы кальциевых каналов ЛПНП=липопротеин низкой плотности рСКФ=примерная скорость клубочковой фильтрации  
 САК=соотношение альбумин креатинин, если нужно.

**Specific Actions:**

- ✓ Establish working group of clinical experts.
- ✓ Review international examples and select prototype.
- ✓ Conduct field testing in primary care sites.
- ✓ Finalize design of flowsheets, discharge coding based on feedback.
- ✓ Make regulatory changes to approval flowsheet, discharge coding template for use; eliminate duplicate documentation requirements.
- ✓ Design and implement on-line and in-person training.
- ✓ Develop process for random audits of charts through quality control department of Ministry.
- ✓ Embed electronic version of flowsheets into EMR.
- ✓ Introduce a financial incentive for entry of data for each patient visit into EMR.
- ✓ Develop flowsheets for other conditions.

**Establish a national quality indicator list (3)**

Indicators should have standard definitions and the list should focus on high-priority diseases where improvements will lead to better outcomes. As noted above, they should be true quality indicators with a numerator and denominator, rather than simply utilization measures. The indicator list should eventually cover all major conditions (maternal and child care, non-communicable diseases, HIV/TB), including the 19 states and conditions designated in this strategy to be managed within PHC. Implementation of this list can occur on a phased basis, beginning with the most common conditions. The list should include indicators for prevention, screening and treatment; and have a mix of process and outcome indicators. Organizations listed in Table 2 maintain quality indicator lists and examples can be found on their websites.

Data in the structured documentation templates described above (recommendation 1.1) should be entered into an electronic database and all indicators should be calculated automatically. This step is essential as the usual method of requiring facilities to do manual audits and calculations for each indicator is wasteful of resources and unsustainable. This system should be pilot tested in selected regions (e.g. Syrdaria) prior to implementation across the country.

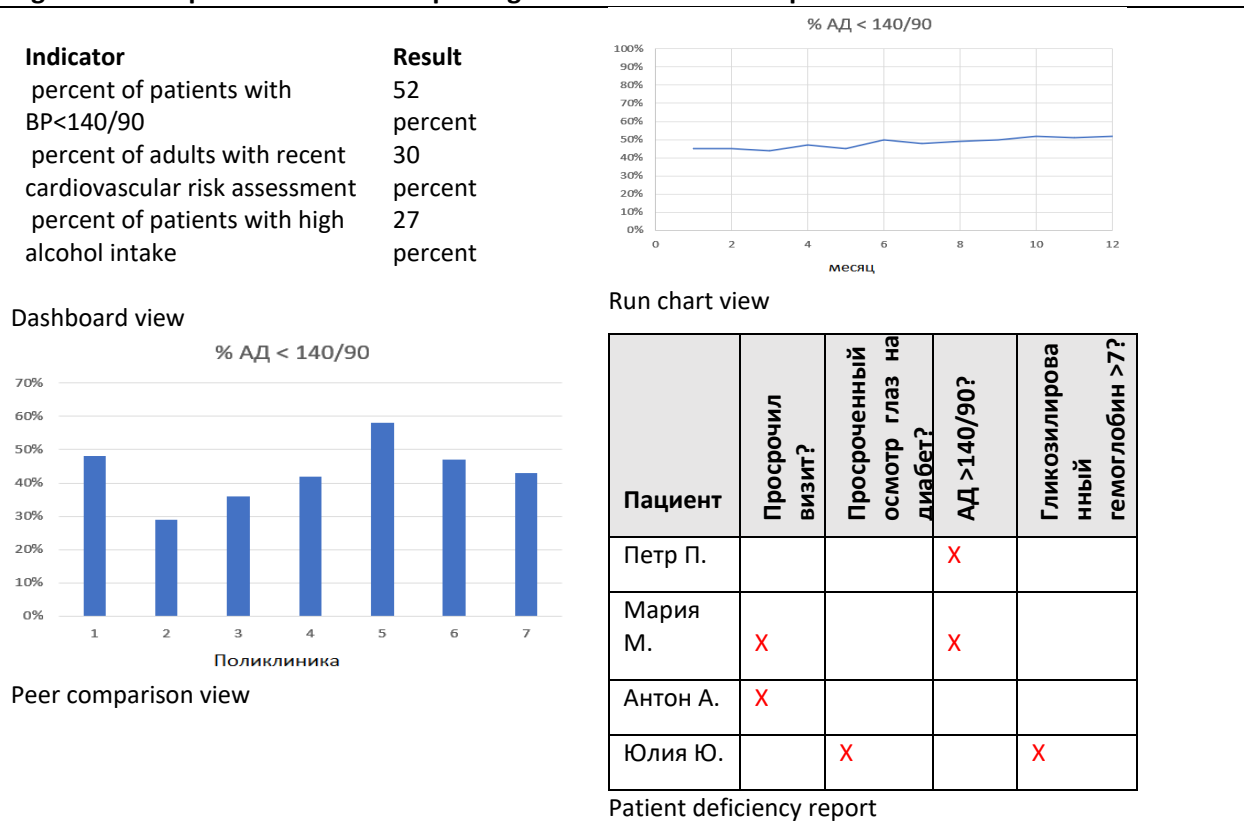
### Specific Actions:

- ✓ Working group on health information (above) to review proposed indicator list and consider other indicators for inclusion.
- ✓ Approve indicator list.
- ✓ Using staff from Health Information Unit, establish indicator definitions, meta-data for indicators.

### Develop a national reporting framework (4)

Each health facility should receive key information to manage quality, including dashboards (indicators of current performance), run charts (trends over time), peer comparisons, and patient deficiency reports identifying specific gaps in quality for each individual patient which need to be addressed (see Figure 5).

**Figure 5: Examples of Four Core Reporting Formats to be Developed**



It is recommended that a consensus-building exercise be conducted among Ministry of Health, academic organizations and clinical leaders to agree in principle on this framework. Then, these types of reports can be gradually developed within the health information infrastructure of the health system over the course of this national plan. This reporting framework should also be piloted, for example in the two districts in Syrdariya; field testing will allow PHC providers to offer feedback for improvement on the design of the reports.

### Specific Actions:

- ✓ Working group on health information to agree on common standard reporting templates to be developed.
- ✓ Approve vision for future reporting.
- ✓ Using staff from the health information unit, phase in reporting of quality information to health facilities.

### **Free providers' time for interaction with patients (5)**

Aim to reduce documentation time from two-thirds to one-third of provider's time. There are some efforts currently underway, such as recent legislation to end repeat hospitalizations for disability status. Interviewees also noted requirements for documentation of the same information into both the paper chart and EMRs, but it is anticipated that paper documentation will be eliminated once adequate data backup processes are in place. Other improvements, however, could be implemented in the future. The shift to structured documentation above should reduce time-consuming free-hand note writing. The development of a standard, routine reports may reduce the number of ad hoc requests for reports from health facilities.

What is recommended is a continuous process of review of documentation requirements, led by the Health Information Unit, to measure actual documentation time periodically and strive to a goal of reducing documentation time for providers to 1/3. Measures to accomplish this include eliminating data fields deemed not useful; transferring documentation tasks to administrative staff; triaging requests for information from different levels of administration.

#### **Specific Actions:**

- ✓ Establish a standing committee on documentation reform, including clinical experts, labor groups, employers, Ministry of Health.
- ✓ conduct periodic reviews of documentation requirements with the aim of eliminating redundant or obsolete requirements.
- ✓ ensure all new documentation requests are evaluated for their impact on provider time and are accompanied with a plan to eliminate old forms of documentation or offload documentation time to administrative staff.
- ✓ Establish a routine, annual evaluation of documentation time for primary care providers, based on a random sample of PHC sites, to monitor progress towards the goal of reducing documentation time to 1/3.

### **Implement national, standard, on-going patient experience survey and periodic staff survey of all facilities (public, private) on engagement and patient safety culture (6)**

Where possible, internationally standardized instruments should be used at least in part. For example:

The Consumer Assessment of Health Care Providers (CAHPS) surveys have been developed by the Agency for Healthcare Research and Quality (AHRQ) in the USA . There are separate surveys for hospital in-patient care (HCAHPS), day surgery (OAS-CAHPS), primary care and specialty outpatient care (CG-CAHPS), home care (HCBS-CAHPS), and for nursing homes. These surveys have been extensively validated and are in the public domain, available for use for free by all organizations.<sup>54</sup> As noted above, efforts are already underway to introduce the HCAHPS survey to Uzbekistan; future activities can build on this experience.

The Canadian Inpatient Experiences Survey uses 22 questions common to the HCAHPS survey, adds additional questions specific to Canada and allows provincial jurisdictions to add extra questions related to their local context.<sup>55</sup> Aligning to parts of the HCAHPS allows for international comparisons and benchmarking on at least some measures.

The AHRQ also has a set of surveys on patient safety culture, for use in different settings such as hospitals or primary care facilities.<sup>56</sup>

Administration of the survey should be overseen by the health information unit described in recommendation above and may be implemented by the staff of the unit or outsourced to a third party. To ensure data quality and independence, it is not recommended that individual health facilities conduct the survey.

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<sup>54</sup> CAHPS: Assessing Healthcare Quality from the Patient's Perspective (ahrq.gov)

<sup>55</sup> Canadian Patient Experiences Survey — Inpatient Care Procedure Manual, January 2019 (cihi.ca)

<sup>56</sup> Surveys on Patient Safety Culture | Agency for Healthcare Research and Quality (ahrq.gov)

It is also recommended that participation in surveying be mandatory for all private sector health facilities, to promote accountability to the public and help individuals make informed choices about where to seek private healthcare. Furthermore, it is recommended that private sector providers be charged for participation in surveys at a rate which helps subsidize survey costs across the country.

**Specific Actions:**

- ✓ Select or adapt existing international survey for hospital and primary care services.
- ✓ Field testing of survey, logistics (mail, phone).
- ✓ Implement survey on a phased basis.
- ✓ Provide feedback data to institutions.

**Introduce public reporting of quality by individual facility (7)**

This should be phased in gradually and only after there is consensus among providers that data are reliable across the country. This information encourages lower-performing facilities to match results of their best-performing peers and supports patient choice, particularly for those choosing a private facility.

There are many examples of public reporting websites in other countries, such as USA, Canada and Colombia. The USA Medicare website has certain desirable features, such as different viewing options for the general public and for healthcare providers. For example, a simple five-star rating for a small number of summary indicators was designed for the public, because it is easy to understand. Providers, however, prefer to view results on individual micro-level indicators so they can find out exactly where they need to improve. Colombia is an important example because it demonstrates that extensive public reporting is possible even in middle-income countries, if they make the appropriate investment in health information infrastructure.

**Specific Actions:**

- ✓ Develop website for publishing quality indicator data by individual institution. This should be phased in over time and implemented only after the establishment of indicators, data collection systems, data quality assurance and reporting back to individual institutions.

**Introduce decision support tools (8)**

These can include standard patient order sets for different diagnoses to remind providers of which tests, drugs and treatments are indicated in that situation. Such tools also exist for adjusting medications (e.g., hypertensives, insulin) or making a diagnosis. There are also tools to engage patients in decision-making, including improved communication or discouraging inappropriate use of services.

Decision support tools need to be carefully selected and designed. First, they must be aligned with the national clinical protocols and practice guidelines in use. Second, they should be visually appealing, logical and easy to follow. Accomplishing this often requires the engagement of graphic designers. Third, they should strike a balance between simplicity and complexity. To ensure all of these design features have been optimized, extensive field testing among users is necessary.

Decision-support tools have been developed by individual researchers and academic institutions; by societies of specialty physicians or professional associations; by disease advocacy groups (e.g., the International Federation for Diabetes); non-profit organizations; and for-profit companies. The Ministry of Health will need to designate the organization which should be responsible for overseeing the design and implementation of these tools.

**Specific Actions:**

- ✓ Procurement of tools (e.g., hospital order sets).
- ✓ Field testing and approval.

- ✓ Training modules.
- ✓ Integration into EMR.
- ✓ Expansion of tools (e.g., reminder systems in EMRs for drugs, checklists, appropriateness criteria).

### **Reform patient complaints process (9)**

It is recommended that patients be strongly encouraged to submit complaints first to the facility rather than the Ministry of Health. The Ministry of Health should establish standard guidelines and procedures for health facilities on how to manage complaints effectively, as well as a standardized database for documenting and managing complaints. Patients would still retain the right to submit complaints to the Ministry if desired.

Australia has developed numerous standards and guidelines to assist facilities in handling complaints. The Queensland Ombudsman recommends triaging complaints to Level 1 (handled by frontline staff), Level 2 (requiring internal review) and Level 3 (requiring external review).<sup>57</sup> For all levels, the system must execute five functions well: receiving, recording, processing, responding and reporting (see Figure 6). The system must also have a clear set of policies and procedures, a complaints database system, specially trained staff and clear communications to patients on how to lodge complaints. Monash Health in Australia has documented additional best practices for complaints management and has developed a taxonomy system for classifying complaints, allowing for analysis and evaluation of complaint management processes in the future.<sup>58</sup>

#### **Figure 6: Characteristics of a Strong Patient Complaints System**

(adapted from Queensland Ombudsman guidelines)

##### 1. Receiving complaint

- Complainant can be a patient or a family member
- Option for anonymous complaint exists
- Process for lodging complaint is well-publicized and easy to access
- Multiple options provided to lodge complaint (e.g., phone, internet, email)
- Persons with disabilities or language barriers are offered assistance in making complaint
- Complaint is received in a positive and respectful manner
- Complainant receives acknowledgement that complaint has been received
- Communication to complainant on expected timeframe for response and contact person

##### 2. Recording complaint

- information is documented into a standardized database, including:
  - details of the complaint (time, place, persons involved, actions)
  - why they are dissatisfied
  - how they are affected
  - any supporting relevant information
  - desired outcome to resolve the complaint

##### 3. Processing the complaint

- triage the complaint to front-line resolution, internal investigation or external review depending on severity or other considerations
- if internal investigation, then:
  - identify internal investigator or team members (not involved in the incident)
  - collect information, including health records; interviews; visit of site; creation of timeline of events
  - consider benchmarks for an acceptable level of care
  - establish if complaint is justified or not

<sup>57</sup> Complaints Management Resource. Queensland Ombudsman, Brisbane, Australia, 2021, 5<sup>th</sup> Edition

<sup>58</sup> Garrubba M & Melder A. 2019. Best practice for complaints management processes and evaluation: scoping review. Centre for Clinical Effectiveness, Monash Health, Melbourne, Australia

#### 4. Respond to complaint

- If complaint is justified, consider remedy, including: apology or admission of fault; change of decision; refund (if money paid), compensation.
- Describe proposed changes to system to prevent issue from recurring
- if complaint is not justified, communicate the reason why and offer option to appeal to external review
- close the complaint and record how it is resolved in database

#### TMA

#### 5. Reporting

- document findings from the investigation
- allow complainant to review report findings
- make report available if complainant wishes to escalate the process to an external review

#### Specific Actions:

- ✓ Establish terms of reference for technical assistance; hire international consultants for technical expertise.
- ✓ Develop national guidelines and recommended policies and procedures for health facilities for complaints management.
- ✓ Purchase or create technical expertise to develop or update existing software for complaints documentation and management.
- ✓ Field testing of new system; revise system based on feedback.
- ✓ Decree to approve new system.
- ✓ Training of sites to implement new system.

#### Establish quality improvement agency and quality campaigns (10)

The aim of the quality improvement agency is to support the development of quality management skills, focusing on training and coordination of peer learning activities. (For greater clarity, it would not have an oversight and governance role; this would be carried out using existing reporting relationships, for example between the oblast/rayon and the health facility.) Such an agency may be a stand-alone organization, or it may be incorporated into an existing organization, such as an academic or training institution. It is recommended that it not be placed within the same organization that has the authority to issue sanctions or punishment, as healthcare providers need to feel safe in discussing quality problems openly without fear of reprisal. Hence, it is recommended that these functions be placed outside of the Ministry of Health.

There are multiple examples of this type of agency in other countries, with different organizational models, any one of which could be applied in Uzbekistan:

In the USA, the Centers for Medicare and Medicaid has funded Quality Improvement Organizations for almost two decades, to support improvement activities. Previously, these were separate agencies administered by each state. While some of these state-level organizations still exist<sup>59</sup>, the federal government more recently has created “quality improvement networks” for 12 regions of the country.<sup>60</sup> Each network is managed by a designated organization which is awarded contracts to implement programs such as staff training on best practices and “collaboratives”, or campaigns on selected topics such as improved nursing home care, where healthcare facilities voluntarily participate in multiple learning sessions over the course of a year to improve their performance. Some networks are managed

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<sup>59</sup> Who We Are | iMPROve Health

<sup>60</sup> About QIN-QIOs | qioprogram.org

by non-profit firms<sup>61,62</sup> while others are coalitions of multiple organizations such as hospital associations and other provider groups.<sup>63</sup>

In Canada, several provinces have established health quality councils with a mandate to support quality improvement. For example, the Saskatchewan Health Quality Council ([hqc.sk.ca](http://hqc.sk.ca)) over the past twenty years has implemented training programs in quality management and coordinated quality improvement campaigns on topics such as chronic disease management, improved patient flow and better nursing home care. The Council was established through legislation as a publicly funded but independent entity operating at arms-length from the government.

In the UK, the National Health Service for the past two decades has operated quality improvement support functions through units within its own organization. Its main unit, previously known as the NHS Institute for Innovation and Improvement is currently called NHS Horizons. The NHS “Improvement Hub” is a web-based repository of resource materials on past quality improvement campaigns<sup>64</sup>, covering a broad-range topics such as patient experience, improved patient flow and scheduling, diabetes, stroke and building leadership capacity.

(It is important to note that the NHS is separate from the Ministry of Health and Social Care, and is also separate from the regulatory body, the Care Quality Commission which conducts inspections of facilities.)

Key tasks which need national coordination include design of quality improvement training programs and provision of support and mentorship to providers and facilities throughout the country to make improvements and engage in peer-to-peer learning. Once created, this agency should establish a national voluntary quality improvement campaign in one clinical area for primary care and one for hospital care, building on these newly acquired skills.

There will be an important need to develop a set of highly trained quality improvement coaches or advisors who can provide support to quality improvement teams in implementing change. One method of organizing this group of professionals is to have the national quality agency employ them and assign them to support different healthcare institutions. Another option is to embed these coaches within health care facilities as employees of the facility. Either option can be chosen.

#### **Specific Actions:**

- ✓ Establish terms of reference for QI capacity building unit; legal framework; proposed budget; identify where entity will be placed (new or within existing organization).
- ✓ Establish advisory committee or board of directors.
- ✓ Build up staff complement over time.
- ✓ Partner or contract with existing international training programs; provide training to core staff.
- ✓ Establish national QI training program for quality managers in healthcare facilities.
- ✓ Establish QI campaign in a high-priority clinical topic (e.g., non-communicable diseases, maternal/child health).

#### **Mandate QI teams and staff and establish quality improvement facilitators in each district (11)**

Health care organizations should be required to have a designated quality focal point and establish QI teams. The Ministry should support the development of a basic on-line education program to develop basic improvement skills. Several excellent resources already exist, but such programs will need to be translated into Uzbek and Russian and adapted to the local context, with the assistance of local and

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<sup>61</sup> Company | Comagine Health

<sup>62</sup> About Us ([ipro.org](http://ipro.org))

<sup>63</sup> About Us - Superior Health Quality Alliance ([superiorhealthqa.org](http://superiorhealthqa.org))

<sup>64</sup> Improvement Hub ([england.nhs.uk](http://england.nhs.uk))

international experts. Subsequently, the Ministry should support the development of a more intensive, advanced, locally administered quality skills training program.

The types of skills that these teams and staff should develop include: ability to analyze the root cause of a quality problem; identify the steps involved in a complex process of delivering patient care, identify bottlenecks, errors or miscommunications and redesign the process; ability to collect small samples of data to identify where problems exist; identify and manage conflicts between staff that arise whenever a new idea for improvement is proposed; ability to test new ideas for improvement and test variations on how the idea is implemented, in order to ensure that the new idea works smoothly.

To support the development of quality improvement teams, it is recommended that quality improvement facilitators at a higher level of training be deployed throughout the country, at a ratio of approximately one facilitator per rayon, with additional facilitators available in larger cities. These facilitators should be responsible for providing mentorship, continuous training and assistance with implementing quality management methodologies.

It is recommended that once these teams are created and trained, they be asked to focus on trying to improve a specific quality indicator on a high priority topic (e.g., improving blood pressure control among hypertension patients).

**Specific Actions:**

- ✓ Purchase, adapt, translate, field-test on-line and in-person training materials.
- ✓ Offer training for free on voluntary basis to healthcare facilities.
- ✓ Introduce a requirement for all health facilities to have at least one staff with basic quality training (or multiple staff for larger institutions).
- ✓ Hire and train 50 quality improvement facilitators, with one in each rayon and additional facilitators in major cities.

## PAPER 4: Human Resources

### Introduction

The goal of the human resources block evaluation was to perform a comprehensive overview of human resources in the Uzbek healthcare system to identify and understand weaknesses and to prioritize interventions in both short and longer timeframes to achieve universal health coverage. Commonly used frameworks for performing situational analyses were identified and employed, along with multiple interviews and site inspections, during several missions to Uzbekistan. Initial review identified issues with HR management, physician training and distribution, licensure, nurse training and outdated limits on both nurse and primary care clinical roles. Absence of a viable medical research capability was identified by bibliometric research and confirmed in site visits.

The scope and focus of our evaluation followed WHO guidelines which define Human Resources for Health as involving “all people engaged in actions whose primary interest is to enhance health”<sup>65</sup>, “those who promote and preserve health as well as those who diagnose and treat disease. Also included are health management and support workers—those who help make the health system function but who do not provide health services directly.” “...not only the better-known cadres of midwives, nurses and physicians, but all health workers, from community to specialist levels, including but not limited to: community-based and mid-level practitioners, dentists and oral health professionals, hearing care and eye care workers, laboratory technicians, pharmacists, physical therapists and chiropractors, public health professionals and health managers, supply chain managers, and other allied health professions and support workers”.<sup>66,67</sup>

The approach chosen consisted of first setting high-level goals for Human Resources for Health for the Uzbekistan Health System Strategy 2030 to narrow the focus of the situation analysis. For the situation analysis, two frameworks were chosen to ensure a systematic approach and coverage of recognized factors that affect and are related to the establishment of Human Resources for Health. In addition to the WHO Health Labor Market framework<sup>68</sup>, we used the Interrelationships between health professionals’ job market and the education market model<sup>69</sup>.

### Situation analysis

**Analysis of main challenges** In-country research conducted over successive missions has revealed a number of challenges with respect to the status of human resources for health in Uzbekistan. These relate to human resources planning, health worker licensure, education of health workers, the preparation of physicians and nurses for primary care roles, the limited scope of practice, low clinical competency and performance of health care workers as well as the absence of scientific foundations for healthcare research.

While many countries are unable to achieve universal health coverage because of a lack of sufficient healthcare workers, the total numbers of healthcare staff, both physician and non-physicians, are sufficient to provide universal health coverage for Uzbekistan. The major problems in Uzbekistan are related to the organization, distribution and training of healthcare workers to meet the primary health needs of the country. Though many vacancies are noted in primary and secondary care positions, especially in rural districts, there does not appear to be an absolute deficit of physicians in Uzbekistan. Uzbekistan has approximately 2.4 physicians per 1000 population which exceeds minimum WHO

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<sup>65</sup> WHO 2016. *Health workforce requirements for universal health coverage and the Sustainable Development Goals*

<sup>66</sup> WHO 2016. *Global strategy on human resources for health: workforce 2030*.

<sup>67</sup> USAID 2018. *Health System Assessment Approach (HSAA)*. Section 3: Guidance on assessment of the health system and its core functions. Module 3: human resources for health.

<sup>68</sup> Sousa, A., Scheffler, R., Nyoni, J., & Boerma T. 2013. *A comprehensive health labour market framework for universal health coverage*. Bull World Health Organ. 2013 Nov 1; 91(11): 892–894. doi: 10.2471/BLT.13.118927

<sup>69</sup> McPake, B., Squires, A., Mahat, A., & Araujo, EC. 2015. *The Economics of Health Professional Education and Careers*.

requirements and is equal to ratios seen in a number of highly developed countries. Uzbekistan has sufficient numbers but has a distorted ratio of subspecialists to primary care physicians and unequal distribution to rural areas. The practical deficit is in primary care physicians as only about 15 percent of physicians in Uzbekistan currently function in primary care roles (about half as many as in the EU and North America). Additionally, the quality of primary care, especially in rural areas, is poor. Low salaries and no possibility of career advancement in primary care often encourage new primary care physicians to leave their positions to seek clinical residencies in subspecialty fields. Primary care physicians are often recent graduates who lack the necessary clinical abilities or confidence to address common conditions without needing to refer for consultation. This contributes to a lack of public trust in the primary health care system and results in excessive referrals to secondary and tertiary healthcare facilities. Unnecessary referrals are not only inefficient but actually lower the quality of primary care by fragmenting care and wastes resources and time for both patients and the healthcare system. Largely due to the inadequate training and experience of primary care physicians, district hospitals have subspecialists providing services that experienced, well trained primary care physicians provide in many other countries.

As is the case with physicians, there is no deficit of nurses as Uzbekistan has more than the OECD mean number per 1000 population. There is however a deficit of bachelor trained registered nurses who could make direct contributions to primary care especially in areas lacking adequate primary care physicians. As nurses currently function only in assistive roles, opportunities for task shifting will depend on enhancing nurse education to directly address primary care needs and changing existing regulations to permit nurses to perform additional tasks.

The main challenge for Uzbekistan is therefore not to produce more physicians and nurses, but rather to do a better job of training healthcare workers with skills necessary for efficient primary care delivery and to reassess the roles of physicians and nurses in providing primary healthcare. Many thousands of physicians currently serving as ambulance attendants or supervising small outpatient laboratories for example could be retrained as family physicians to fill vacancies. Likewise, nurses could be used to free up physicians (e.g., ambulance emergency medical technicians) or as laboratory supervisors to free up physicians.

A lack of healthcare research capacity, especially to address primary care issues and efficient use of secondary care capacities, is an additional challenge. Research fields such as Clinical Epidemiology, the foundation of evidence-based medicine, and Implementation Science, the field that studies how to effectively introduce evidence-based guidelines and other quality improvement changes into routine clinical practice, are almost completely absent in Uzbekistan. Both sciences are relatively inexpensive to develop and would yield significant returns on investment in a short timeframe. Both would contribute to improving clinical care, the quality of biomedical research, and the effectiveness and efficiency of the public healthcare system.

Improving education, task shifting and research capabilities to meet primary care needs and universal health coverage are the key human resource challenges. A series of recommendations follow to address these challenges.

### **Relatively low competencies of health care workers shape public skepticism about the performance of Uzbek healthcare**

*Uzbekistan does not meet current international standards to ensure qualification of medical graduates prior to entering clinical practice.*

Uzbekistan has no requirement that medical, or other health care professions graduates pass any comprehensive examination that meets international standards prior to entering practice. Current

standard national examinations required for graduating medical and nursing students have not been validated in comparison to international standards. Medical educational institutions are not evaluated or compared by the success of their graduates on validated, standardized examinations as are the case in Europe and North America and many other countries. That current medical education is substandard is evidenced by the difficulties faced by physicians and nurses trained in Uzbekistan to pass international examinations to obtain licensure outside the former Soviet Union.

*Despite Continuous Professional Development (CPD) requirements Uzbekistan has no requirements for certification to maintain licensure.*

Uzbekistan has not yet adopted any requirements for recertification of healthcare providers to maintain a medical or nursing license. Once graduated from training, a practitioner is licensed for life. The existing HR database cannot track continuing professional development or recertification information which could be used to assure qualification of physicians and other patient service providers throughout their careers.

*The current HR system cannot track individual healthcare workers through their careers to follow their qualifications and quality of services.*

As the MOH HR department is very small (4 staff overseeing over 400,000 MOH employees) there is basically no opportunity to develop meaningful strategic evaluation of HR issues or to provide reports that could drive change in staffing levels of various health facilities. Current human resources management practices in the MOH are minimalist and do not meet international expectations. Health workforce planning in Uzbekistan is centralized without substantial independent input or feedback from local level managers on changing staffing needs or from the healthcare workforce on working conditions. Staffing tables for clinics and hospitals are largely inherited from the Soviet Era with little evidence of recent in-depth review. The current system efficiently supports a static formula for HR staffing planning but does not seek to identify or address changing conditions. The top-down application of personnel policies is simple but not responsive, and downstream local managers are largely prohibited from modifying existing staffing patterns or addressing staff concerns and complaints. The current system not only lacks flexibility but is not using evidence-based standards and best practices. Current policies are not subjected to regular in-depth reviews and updates.

Citizen complaints have increased in recent years. Responding to appeals and complaints occupies MoH as well as regional and local authority's time. The public often seems skeptical of the quality of medical care available in district level facilities. Patients frequently attempt to bypass established and logical referral patterns in seeking care. Despite frequent complaints, the HR department plays almost no role in monitoring or assuring the quality of practitioners. As there is currently no register of healthcare providers that would include information on licensure, recertification, and job performance within the MoH. The current HR system lacks the ability to track individual healthcare workers through their careers. Current systems also lack sufficient detail for labor forecast planning.

*Graduates of Uzbekistan medical universities are ill prepared to assume independent primary care clinical roles upon graduation.*

Unfortunately, medical higher education institutions do not produce practitioners whose clinical skills at graduation meet community and patient health requirements and expectations. Most medical higher education institutions show a strong bias towards specialty training rather than preparing students for roles as family physicians. Much teaching is focused on the need for the student to understand the disease process itself rather than encouraging an understanding of the disease in relation to the needs of the patient or the functions and skills needed by a community family physician. The nature of their subspecialty organized curricula and lack of attention to developing practical patient care and clinical reasoning skills indicates that medical schools simply do not focus on teaching subjects or skills needed

by a future primary care physician. Excessive dependence on lectures rather than teaching by discussion of clinical issues at the bedside limit student learning of clinical problem-solving skills. Of note, students educated in former Soviet Union medical schools, all of which follow similar lecture based medical curricula, fail the Indian foreign medical graduate qualifying examination 85 percent of the time. Lack of clinical experience is noted as the main reason for such high failure rates. Facts delivered in lectures can easily be looked up in textbooks, but clinical reasoning skills are not learned efficiently without interaction with more experienced clinicians while students are actively engaged in patient care decision making. The emphasis on lectures over development of clinical reasoning skills is a key deficit in current Uzbek medical education and is inconsistent with modern international medical education norms. The emphasis on passive learning through lectures not only ignores principles of adult education, but also fails to teach students lifelong learning skills and efficient use of medical literature. Modern medical education should emphasize problem-based learning rather than passive learning from lectures. Students should learn to identify their knowledge gaps and then how to find appropriate literature and current textbooks to study. When in practice, they will not have access to lectures while solving daily clinical problems.

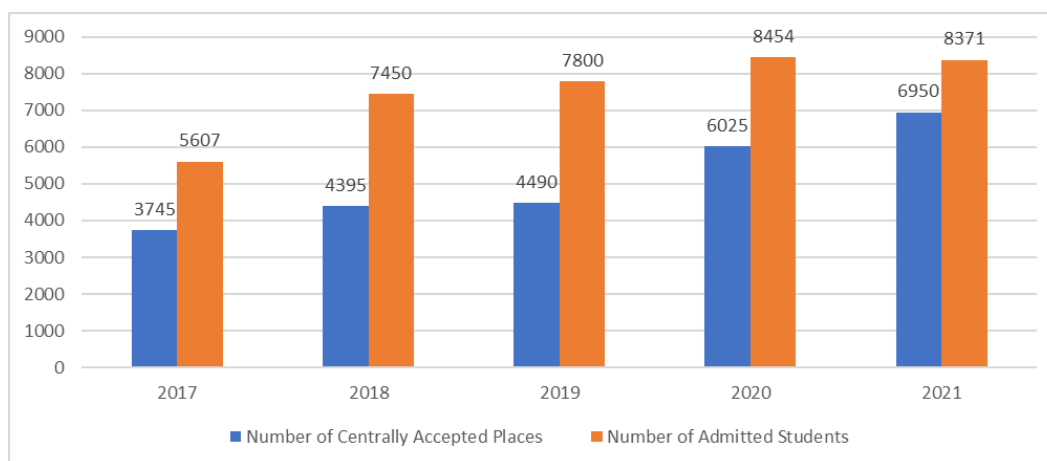
The recent decision to give more autonomy to the nation's higher medical educational institutions (HMEI) means that those institutions now follow their institutional goals rather than being coordinated to meet national human resource goals. This will only result in the graduation of larger numbers of poorly trained physicians. HMEI enrolled nearly 50 percent more medical students between 2017 and 2022 than the government planned numbers. The emphasis today in Uzbekistan is quantity, not quality of medical graduates. Medical student enrollments have expanded but little attention has been given to improving the quality of training provided for future family physicians. Given the 2022 admission of 8371 medical students, this will result in a ratio of nearly 24 medical graduates per 100,000 population which is almost double the average for OECD countries and close to the highest in the world. Even the government approved places (6950 in 2022) will give nearly 20 graduates per 100,000 population which is still far above OECD norms of 13/100,000. Increased enrollment of tuition fee paying students has doubled in several major medical higher education institutes without any commensurate increase in clinical teaching resources (See Figure 1). Admission of foreign students, which account for 7 percent of all students from 2017-2021 in the 11 HMEI contributes to this imbalance of faculty to student ratio. Urgench, Bukhara and Samarkand HMEI are more affected by foreign student numbers than other schools.

The recent large increases in enrollment of students in the major Uzbek medical schools, averaging a 50 percent increase in 2021/2022 over 2017/2018, will result in faculty to student ratios far exceeding acceptable norms. A 1:6 ratio of faculty to students was established by Presidential Decree #2107 in 1998 but nearly all the HMEI have exceeded this ratio since 2019. Tashkent Medical Academy (TMA) admitted 1506 students in 2021/2022 (which gives a projected 6-year total student enrollment of 9000 by 2028). Available patients for teaching did not change and faculty numbers increased only modestly in comparison to the increased number of students. Such a large student enrollment would require a faculty size of approximately 1500 full time faculty just to meet a modest 1:6 faculty to student ratio as mandated by PD#2107. Given the current number of TMA faculty (about 750), the ratio of faculty to students in 2028 will be approximately 1:12 which is far outside acceptable norms and will be among the highest (worst) ratios in the world. This mismatch will become especially apparent, and difficult to remediate when these larger classes enter the clinical years of training as insufficient clinical beds and clinical faculty are available. While TMA is obviously too large to provide appropriate faculty to student ratios, the same basic problem is also evident at Tashkent Pediatric Medical institute (TPMI), Samarkand, Bukhara, Andijan, Urgench and other HMEI.

The ratio of faculty to students is important, especially for clinical rotations where students learn important clinical reasoning, problem solving and patient care skills. Globally, the ratio of medical school faculty to students varies by region but is generally in the range of 1:2 (USA), 1:3 (Europe), 1:3 (India), 1:4

(Eastern Mediterranean and Central Asia (pre-2000) and greater than 1:6 (Africa).<sup>70</sup> Inadequate numbers of faculty forces instruction to occur in lecture or group discussion settings and misses the critical need for one-on-one bedside teaching for students. Based on questioning of young primary care physicians in Uzbekistan, it is apparent that Uzbek medical students receive only a small fraction, less than 25 percent, of the one-on-one bedside teaching as students in EU or North America. This is important as that is how students learn practical skills and have the opportunity to develop clinical reasoning and problem-solving skills through interaction with faculty. Faculty assessment and feedback to students on competencies other than simple knowledge of facts also requires faculty time spent observing students individually in direct patient care settings. Learning medicine through lectures and walking around wards discussing patient management is the same as trying to learn to fly an airplane by listening to lectures and walking around an airplane. The lack of directly supervised bedside training for medical students is analogous to a pilot learning to fly without ever having flight training at the controls of an airplane with an instructor demonstrating and then observing the student pilot flying the plane under direct supervision.

**Figure 1. Admission parameters (quotas) in total medical institutions of higher education in the last 5 academic years, as well as information about students of BACHELOR courses of study actually accepted 2017-2021**



In Uzbekistan, medical and nursing training has generally not been adequate to produce skilled primary care physicians and nurses. The current medical education system is based on a curriculum that is subject-centered, time-based, and without focus on competency requirements. The traditional medical education curriculum has been largely replaced in other countries by problem-based learning and more recently by competency-based teaching strategies and assessment using internationally accepted competence frameworks. The teaching–learning activities and the assessment methods currently used in Uzbek MHEI focus more on knowledge acquisition than on attitude and skills. Thus, graduates may have knowledge, but lack the basic clinical problem-solving skills required for effective medical practice. In addition, they may also lack the soft skills related to communication, doctor–patient relationship, ethics, and professionalism. Globally, medical education over the past thirty years has transitioned away from this subject and time centered curricula.<sup>71</sup> Very few faculty from Uzbekistan have had the opportunity to study abroad outside the Commonwealth of Independent States countries to be introduced to new clinical or pedagogical ideas and skills. This maintains the isolation of Uzbekistan in healthcare education and clinical standards.

<sup>70</sup> WHO. 2001. *A VIEW OF THE WORLD'S MEDICAL SCHOOLS. Defining new roles.* Available at: <https://www.iaomc.org/WHOReptMedSchools.pdf>

<sup>71</sup> Frenk, J., Chen, L., Bhutta, Z., Cohen, J., Crisp, N. et al. 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; 376: 1923–58. DOI:10.1016/S01406736(10)61854-5

Clinical training is the weakest element of Uzbek medical education. There are chronic complaints that new medical graduates do not have the competencies necessary to function as effective primary care physicians. Students typically observe rather than actively care for patients during their medical school training. Newly graduated physicians in primary care roles are limited both by inadequate clinical training and by the absence of mandatory internships after medical school. A supervised internship following graduation was eliminated during the 1990's. Closely supervised internship experiences after graduating medical school and lasting at least a year are standard in all EU, North American countries as well as in Australia, South Korea, and Japan.

There is no clinical residency training in family medicine available in Uzbekistan to establish family medicine as a specialty equal in prestige and remuneration to other medical specialties. As a result, physicians desiring any additional clinical training or career advancement are forced into subspecialties. Advanced training for primary care practitioners has not been a focus for medical higher educational institutions in Uzbekistan. Limited, 10-month family doctor retraining for subspecialists has failed to develop family medicine into a robust career path. Earlier attempts to establish clinical residency training programs failed both due to lack of support in the organ focused medical higher educational institutions and also because of limited career prospects for well-trained family doctors. A lack of primary care research training and activity contributes to the difficulty in establishing respected academic family medicine departments in medical higher educational institutions. A significant barrier is that salaries for primary care physicians do not reward those with extra clinical training after medical school graduation.

**Family physicians and mid-level health care workforce (nurses etc.) capacity is both underdeveloped and underutilized in comparison to developed countries, which leads to inefficiencies in use of limited healthcare resources.**

*Adequate numbers of physicians are available but too often poorly trained, maldistributed and inefficient.*

The Ministry of Health is well aware that universal health coverage remains an unmet goal for Uzbekistan and that quality of care is often suboptimal. Additionally, the MoH is aware that inefficiencies in the organization and delivery of medical care wastes resources. Despite having more physicians and nurses per capita than some highly developed countries, Uzbekistan has inadequate numbers of well-trained primary health care workers to provide universal health coverage, especially for citizens outside of metropolitan areas. While more professional primary health workers are needed, it is not a simple matter of increasing numbers. Uzbekistan actually has more than sufficient numbers of physicians (over 90,000) and nurses (over 345,000) to meet or exceed WHO standards for the population (See Appendices 4,5). While Uzbekistan has fewer physicians per 1000 population than the OECD EU average (3.6/1000), the ratio of physicians per 1000 population (2.4/1000) in Uzbekistan (See Figure 2) is virtually the same as in the USA (2.6/1000) and more than most upper middle-income countries (2.3/1000 average)<sup>72</sup> Canada, Brazil, Saudi Arabia, Japan, Turkiye, Singapore and China also have the same or lower numbers of physicians per 1000 population.<sup>73</sup> The number of hospital beds per population also exceeds that of many high-income countries and the number of outpatient facilities is generally adequate. However, the health care system in Uzbekistan often fails to provide efficient quality primary or hospital healthcare which is reflected in complaints and poor outcomes as well as in overutilization of hospital services. Distribution of physicians differs between the regions and remains a problem with inadequate numbers in rural areas.

While more physicians could be utilized, especially in rural areas, it should be clear that the major deficit is not total physician numbers but rather the numbers of well-trained primary care family physicians and

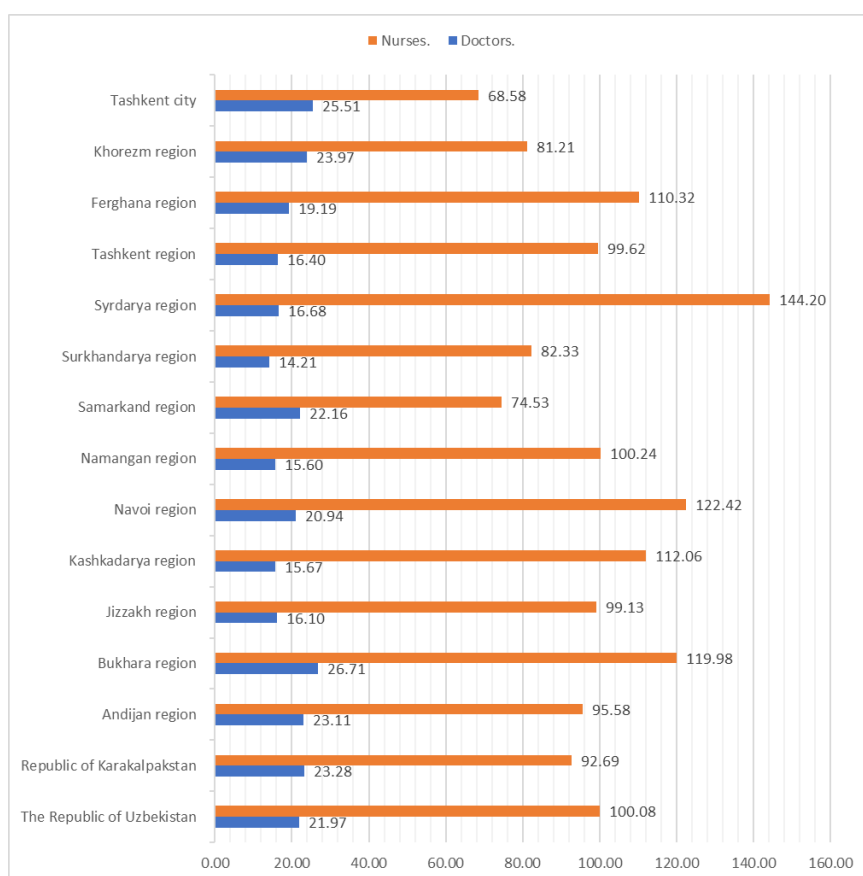
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<sup>72</sup> World Health Organization's Global Health Workforce Statistics, OECD, supplemented by country data.

<sup>73</sup> OECD. 2021. Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/59aa8c9c-en>.

their distribution to rural areas. There are currently virtually no residency trained family physicians in Uzbekistan. 75 percent of general physicians serving in primary care roles have no post graduate clinical training. This differs markedly from primary care physicians in the EU and North America where nearly 100 percent have had at least 3 years of clinical training after medical school. Nearly all primary care physicians in EU and North America have finished a 3-year clinical residency and are board certified in either Family Medicine, Internal Medicine (Therapeutics) or Pediatrics before they practice independently or without direct supervision. Many Uzbek physicians are utilized for roles that are performed by non-physicians in North America or most EU countries. There are thousands of physicians employed as ambulance attendants and as laboratory physicians. Ambulance emergency medical technicians and laboratory supervisors are typically nonphysician practitioners in the EU and North America. Retraining ambulance and laboratory physicians for clinical primary care roles would add substantially to the pool of primary care physicians.

**Figure 2. Number of medical and secondary medical staff per 10,000 population**



*Excessive use of subspecialists in primary care roles is inefficient.*

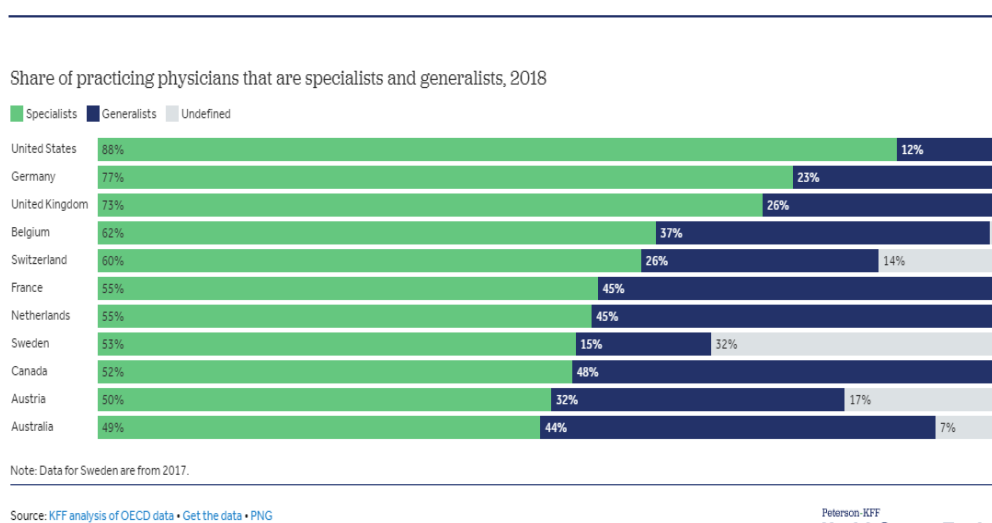
Uzbekistan has a distorted ratio of subspecialist physicians to primary care physicians. Physicians are poorly prepared for primary care roles and too many are serving as underworked subspecialists in an inefficiently organized health system. District level multiprofile polyclinics and hospitals are typically staffed with numbers of subspecialists in addition to general physicians who have had no further clinical training after medical school. There are virtually no family physicians working in District Hospitals. The number of family (2,967) or general physicians (8,040) working as primary care physicians in Uzbekistan accounts for only 16 percent of the total public physician workforce (68,282).<sup>74</sup> This is notably different

<sup>74</sup> The State Committee of the Republic of Uzbekistan on Statistics <https://stat.uz/uz/matbuot-markazi/qo-mita-yangiliklar/10474-yuridik-shaxs-maqomiga-ega-bo-igan-korxonava-tashkilotlarda-ishlovchi-xodimlarning-o-rtacha-oylik-nominal-hisoblangan-ish-haqi-2021-yil-yanvar-mart-2>

from UK (26 percent), Australia 44 percent, France 45 percent, Canada 48 percent (Figure 3). (Note that figures for USA are distorted because internists (therapists) and pediatricians are generally outpatient physicians and considered primary care in USA, while this figure counts only family practitioners. Also, there are approximately 250,000 nurse practitioners in the USA, the majority of whom function in primary care roles). The UK National Health Service system is closest to the health system in Uzbekistan so could be used as a model (with nearly twice the percentage of general or family physicians as in Uzbekistan today).

In Uzbekistan, subspecialty physicians manage problems that are routinely and appropriately managed by a well-trained family medicine physician or other primary care providers in other countries. Rural districts have difficulty recruiting subspecialists so staffing of clinics suffers. Retention of poorly paid primary care physicians in rural areas is difficult as incentives to pursue subspecialty residency training draws them away. Health facilities are inefficient and provide fragmented care requiring patients to shuttle between polyclinics, district and regional hospitals in search of subspecialists for problems that should be easily managed at a family doctor point. Additionally, the presence of subspecialists often interferes with the ability of family doctors to appropriately evaluate and manage patients as the patients perceive visits with the subspecialists as more desirable and easily accessible. The recent rise in private medical facilities is mostly focused on fee-for-service subspecialty care in metropolitan areas and is unlikely to help meet primary care needs in rural areas.

**Figure 3: Percent subspecialists versus general practice physicians by country.**  
<https://stats.oecd.org/Index.aspx?QueryId=30173>



**There are plenty of nurses, however, their educational level is low and scope of practice in health system is assistive.**

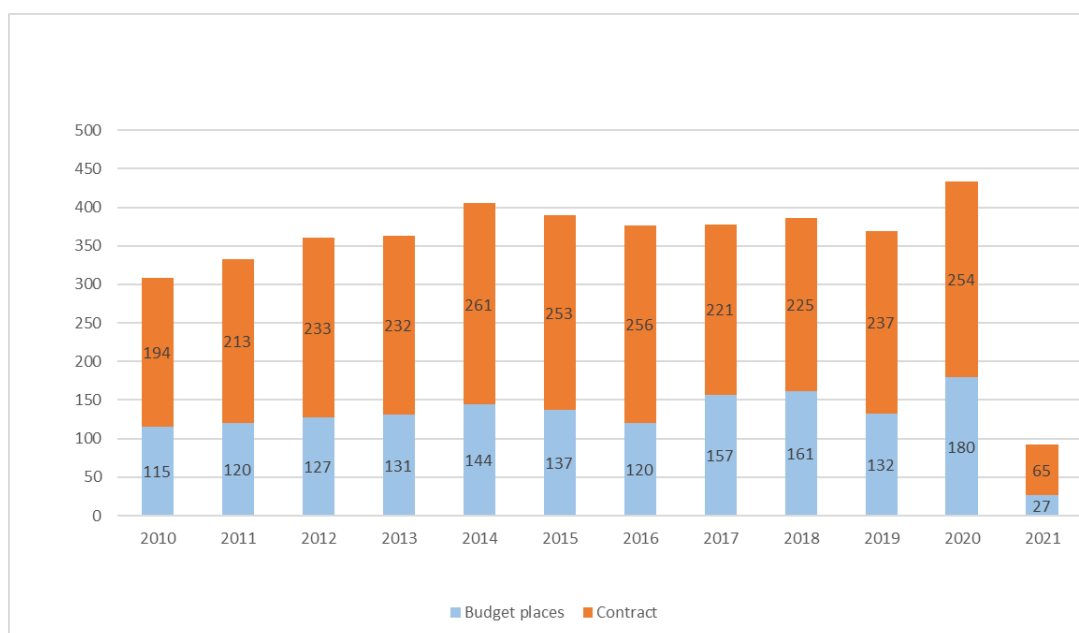
The number of nurses for the population is high 10 nurses per 1000 population compared to OECD 2019 mean (8.8/1000) (See Figure 1), however these are nearly all “practical nurses” and their low competencies and limited job descriptions do not provide nursing services comparable to international standards. In Finland (14,3/1000 population) and Canada (10/1000 population) only 1/3 are practical nurses and 18 percent in US (12.3/ 1000 population) of total nurses' function at a basic, limited associate role. The majority of nurses in EU and North America are trained to a registered (licensed) nurse standard or above and are capable of extended clinical roles compared to Uzbek nurses.<sup>75</sup> There are only 2800 bachelor trained nurses working in Uzbekistan so almost 99 percent of nurses in Uzbekistan function below the standard nurses in Finland, Canada, US and most EU countries. During last 10 years the number

<sup>75</sup> OECD. 2021. Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/59aa8c9c-en>.

of midwives has decreased significantly in Uzbekistan from 25,9 to 19,9 per 1000 population. This is well below the average world density of 44 per 1000. It is also notable that 83 percent of countries report the training of midwives to be at least 3 years duration, which is not the case in Uzbekistan.<sup>76</sup> In addition, other mid-level positions require further development of educational programs. Efficient rehabilitation necessitates a multidisciplinary workforce. Internationally there are many different rehabilitation professions, the most common are physiotherapists, occupational therapists, speech and language therapists, audiologists, prosthetists, and orthotists among others, however, also these professions have not yet been developed in Uzbekistan health workforce.

Between 2010-21 Uzbekistan admitted to bachelor level nursing education total of 4065 students, to master level education 839 students of which only 13 with state grants, and to PhD education three students (see figure 4). Other countries have successfully raised the educational level and roles of nurses, enabling them to do far more than simply serve as doctor's assistants. Korea for example has raised the level of nurses' education considerably during the last 10 years. They now train 100,2 registered nurses per 100 000 population per year, the OECD average being 44.5 (OECD 2021, 231).<sup>75</sup> Lithuania graduated 2019 22 registered nurses per 100 000 and Latvia graduated 26.9. If Uzbekistan would set a target of 25 per 100 000 graduates of registered nurses with EU-directive 2005/36/EC qualification level this would mean that the intake should be almost 9,000 per year into registered nurse training. Additionally, the current educational system for midlevel health care workers in Uzbekistan is structured so that there are no education or career options to proceed in health science to the PhD in nursing, midwifery, physiotherapy, radiography nurses, laboratory nurses, or emergency nursing. The education system allows advancement only within the science of medicine or public health.

**Figure 4: The number of budget and contract places for undergraduate, graduate and doctoral studies in the direction of "Higher Nursing" and "Organization and Management of Nursing" in the period 2010-2021**



(Source: MoH)

At present the traditional roles of physicians, nurses and other healthcare workers do not always correspond to the needs of modern community health services.

These traditional roles of healthcare workers in Uzbekistan are defined in professional standards, and job descriptions. Existing regulations limit use of more efficient staffing strategies to provide health services.

<sup>76</sup> UNFPA. 2021. The State of the World's Midwifery 2021.

Primary care physicians have limited scopes of practice and refer to subspecialists for tasks that in other countries are efficiently managed by well-trained family medicine physicians. Staffing of multiprofile polyclinics with medical subspecialists is inefficient as typical polyclinics simply do not have the volume of complex subspecialty patients to keep many subspecialists busy. For example, there are many endocrinologists working at the polyclinic level in districts but the work they do is largely overseeing type 2 diabetes which is generally done by family doctors in other countries. Similarly, there are many cardiologists working in clinics who are doing work done by family doctors in other systems. Most nurses in primary care settings are limited by tradition and regulation to providing assistance to doctors. Workforce regulations currently limit the possible roles in primary care that can be filled by nurses. The role of professional nursing as used internationally is absent. By comparison, approximately 20 percent of total primary care clinicians in the US are either nurse practitioners or non-nurse physician assistants (advanced feldshers).

What Uzbekistan lacks are sufficient numbers of capable, well trained, primary care providers and professional level primary care nurses. Family polyclinics and family physician points are currently often staffed by newly trained physicians who do not typically remain in their positions after their obligatory 3-year service to repay their government grant is completed. Primary care in low volume settings such as in rural "family doctor points" could be efficiently and safely run by specialized nurses operating with remote physician backup. Such backup can be provided by provider-to-provider teleconsultations. Teleconsultations could also be used by primary care physicians to seek advice from specialists without needing to actually refer a patient. In primary healthcare and ambulance staffing, delegation of duties from physicians to baccalaureate nurses and emergency medical technicians can be considered. Rural family physician points and ambulances could ultimately be staffed by advanced practice nurses not physicians. The Uzbek national emergency system has several points that would benefit from task shifting. Every small ambulance point is currently staffed by a fully trained physician in addition to a nurse and driver. The ambulance physician could be replaced with an emergency medical technician, who would be a bachelor nurse with a specialization in emergency services. Substituting a nurse for the physician would lower salary costs and also reduce the number of physicians needing to be trained. Uzbekistan currently has thousands of Emergency physicians, many of whom work as ambulance attendants. As Uzbekistan currently has a gross excess of nurses, it would be easy to train a corps of emergency/ambulance nurses. Specialized nurses working in telephone help-lines to triage cases by protocols could resolve some patient problems without sending an ambulance crew or appointment to PHC.

### **Existing biomedical research is often of poor quality and not focused on the specific healthcare needs.**

Medical higher educational institutions are largely organized around traditional organ and subspecialty based clinical departments with little evident coordination to focus on teaching or research in primary health care or community health. Medical research meeting international standards, especially research aimed at understanding community health problems and overcoming barriers to implementing solutions, is rarely published in Uzbekistan. As a country, Uzbekistan ranks very poorly on international scales of biomedical research quality and production, ranking 92nd on research impact and lower than any other country of similar size. Very few clinical studies from Uzbek medical research institutes meet standards for publication in international journals with a high impact factor. Research methodology generally does not meet standards necessary for publication in well regarded biomedical journals and this prevents constructive interaction with the world scientific community. Efficient and inexpensive research areas, such as clinical epidemiology and implementation science, are underdeveloped in Uzbekistan but could contribute to research in patient safety, quality improvement, and clinical studies directly relevant to improving Uzbek primary care.

## **Recommendations and actions**

Recommendations to address human resources challenges for Uzbekistan Health System Strategy 2030 focus first on upgrading the MOH HR department and establishing a more active involvement of the MOH in assessing and responding to needs of the public healthcare workforce as well as ensuring the quality of all health workers. A second focus is to improve education and effectiveness of newly trained physicians and nurses. Efficient deployment and utilization of health staff through adopting strategies for effective task shifting which especially address the needs of rural healthcare follow. Finally, we address the need to develop and sustain national healthcare clinical research capabilities focusing on clinical effectiveness, quality improvement and patient safety research capabilities.

### ***A vision of the future.***

1. Data driven HR planning, health workforce registration and licensure meet international standards and the needs of Uzbekistan
2. Uzbekistan meets the international standards for workforce efficiency by employing task shifting and maintaining a skill mix of motivated and productive healthcare workers.
3. Medical education system will graduate medical and other health care professionals that are fully prepared for primary healthcare and internationally competitive in practice and clinical research.
4. All Uzbekistan medical universities have faculty expertise in clinical research and training in fields with the most potential for improving care delivery such as clinical epidemiology and implementation research.

#### **TO REALISE THIS VISION, THE MOH NEEDS TO**

- I. Adopt a unified approach to health workforce planning and management to ensure workforce development is responsive to population and service needs.
- II. Ensure adequate numbers, equitable distribution, task shifting, retention and skill mix of a motivated and productive health workforce.
- III. Improve the quality of education and training to meet the international competency requirements for medical and other healthcare providers.
- IV. Build the research capacity in medicine and other health sciences through development of clinical epidemiology and implementation science programs at all medical higher education institutions and major hospitals.

**The following twelve (12) recommendations relate directly to the underpinning objectives outlined above.**

### **Adopt global codes of human resource management practice as outlined by ISO 30408:2016 Guidelines on Human Governance (1)**

A global standard HR system would help improve public perceptions by assuring that the Ministry of Health was responsive to local needs and tracking important quality parameters and would also allow employees to be assured of fair treatment. It is recommended that an international consultant, experienced in national healthcare services, be contracted to review the department and HR system in the state healthcare and make recommendations in accordance with ISO guidelines. ISO 30408:2016 is a current standard for HR policy development globally and is applicable to organizations of all sizes and sectors, whether public or private. The standard is an outline of elements that an HR policy should address such as principles of governance, roles and responsibilities, aligning human governance with organizational needs, initial analysis of the current system's effectiveness and guidance on how to implement a new HR system. The consultant would also assist in determining a strategy to evaluate levels of qualification and compensation levels as well as recommend efficient methods to survey employees on a regular basis (see 3.5). Following review of the consultant report, the MOH would prepare a decree to implement recommendations.

**Specific actions:**

- ✓ Conduct a comprehensive assessment of health system HR to create and implement management and policy development by an international consultant.
- ✓ Establish a government decree on the implementation of key health system HR recommendations.
- ✓ Ensure the health system HR reviews and differentiates all medical, nursing and other midlevel positions by levels of qualification.

**Develop a national registry of healthcare workers (2)**

To facilitate tracking the total healthcare workforce, including their educational qualifications, licensure, recertification, continuing medical education, employment, and disciplinary actions, it is necessary to develop a robust, flexible registry of all national healthcare workers, public and private. A national registry of this type would reassure the public that quality and practice standards were being appropriately monitored. In order to introduce national standards for healthcare providers there must be a system capable of tracking individuals throughout their careers, ideally beginning with enrolment in professional education. The registry would be developed with support from IT-MED and made accessible at regional level for data entry and reporting. Data elements would include professional education levels, institution from which the diploma/degree has been received, year of graduation, employment history, licensure and recertification, CPD records, absence from active work, awards and any disciplinary actions. Data entry would be staged over several years with physicians entered first followed by nurses and then midlevel workers working with patients. A national agency (e.g., Chamber of Innovative Healthcare) with regional branches need to be made responsible for the management of the national registry. The maintenance of the registry can be financed by licensing fees, approved by the MoH, and paid at the time of recertification.

The proposed HR registry of healthcare workers is differentiated from existing systems (e-Kadr and the registration system being developed by the Chamber of Innovation) in several ways. First, the e-kadr system is still in pilot phase, it is focused on tracking physicians only and is active just in Syrdarya Oblast at this time. The system proposed by the Chamber has not been adopted by the MOH and is a simple registry of physicians, not all healthcare workers. The Chamber system has not been designed to provide a robust interoperability standard-based API (application program interface) that would allow future linkage with a national eHealth system and serve as the source of healthcare worker data necessary for the national ehealth system. Neither the e-kadr nor Chamber system will permit tracking of all national healthcare staff throughout their careers from initial professional education through licensure, recertification, continuous professional development and employment history.

Standards for licensure of healthcare providers are changing globally to increase oversight and quality standards both initially and throughout health provider careers. A mandatory system of recertification for healthcare professionals similar to that introduced in India should be established.<sup>77</sup> This will be tracked by the National Registry and could be based on acquiring 288 CPD hours in each five-year period since the first licensure, with no licensing exam requirements until a robust, objective and independent examinations modelled after international recertification exams are put in place. Failure to complete requirements would result in license withdrawal. To initiate the program without unintentional disruptions in physician's licensure, the initial recertification expenses will be paid by employer (MOH, HMEI or private clinic) and failure to complete recertification will result in warning but not suspension of license for six months while requirements for recertification are completed. Recertification process will be coordinated with and cannot begin until a National Registry is operational.

**Specific actions:**

- ✓ Approve minimum data requirements and standards for the "National Registry of Healthcare Workers" (with sources, mechanisms for collection) for physicians, dentists, and nurses, midwives, paramedics

- ✓ Operational and accessible "National Registry of Healthcare Workers" to the MoH, regional and district health authorities, and respective HR teams
- ✓ Establish a mandatory process for licensing and renewal every five years based on CPD hours for each healthcare profession.

### **Develop and adopt a comprehensive national board examination system, which meets international standards (3)**

As regulation of healthcare has increased globally, so has the demand for large scale national examinations and assessments as a means of assuring minimum competency standards. National examinations and assessments as a means of assuring minimum competency standards have already been instituted in many countries such as the US, Canada, UK, Germany, Finland, Japan, Korea, Malaysia, Türkiye, India, Poland, Sweden, Australia, New Zealand, Bahrain, and UAE all of which now require a national board examination for licensure of medical doctors. An example is well documented in a recent Indian law on improving medical education standards.<sup>77</sup>

Most national board systems are broadly based on the United States Medical Licensing Examination (USMLE) exam in the USA. A variation of that exam, developed specifically for use internationally and modifiable to country needs, is called the IFOM (International Foundations of Medicine) exam. The exam is given in two parts, the first, Basic Science Exam (BSE), is taken after preclinical courses and the second part, Clinical Science Exam (CSE) is taken prior to graduation after all core clinical clerkships. The IFOM exams are essentially short versions of the USMLE with 60 percent of questions taken from retired USMLE exams and 40 percent of questions developed by an international panel. Passing scores can be set by each country and countries can compare their students and medical university performance to that of other similar countries if desired. Different medical universities can be compared to each other and to other international schools. The exam is typically administered via computer with appropriate security safeguards. Scoring and analysis is done by the National Board of Medical Examiners (NBME) in Philadelphia, USA. The cost of the exam is \$50 per student for the preclinical and \$75 per student for the clinical exam. NBME can arrange translation into Russian or Uzbek. Of note, Kazakhstan is running a pilot program with this exam currently and Ukraine has used the exam as well.

An initial Uzbek language paper-based pilot CSE exam for approximately 300 students in Tashkent would be administered prior to roll out to the entire graduating classes of all 13 MHEI the following year. Regular exams would be administered on computer either at a testing center (Prometrix) or at each MHEI. The IFOM BSE will also be piloted and then adopted for all third-year students who will need to obtain a passing score (to be determined by MOH) prior to entering clinical rotations in the 4th year. After full implementation of the CSE, a passing grade (again to be determined by MOH) will be required for graduation and licensure and recorded in the national registry of healthcare workers. Cost of the pilot exams would be borne by MOH or development partners. When exams (BSE and CSE) are adopted for regular national use, exam fees would be paid by MHEI for each student as part of their annual tuition. Students who fail the exam would be allowed to retake it twice (to be determined by the MOH) but at their own expense.

An equivalent international standard comprehensive nursing, dentistry, and pharmacy examinations will be explored and added at a later date. In America, for example, nursing education is evaluated by the National League for Nursing Accrediting Commission (NLNAC) and the Commission of Collegiate Nursing Education (CCNE), which are responsible for implementing educational assessments.

#### **Specific actions:**

<sup>77</sup> India National Medical Commission Act, 2019. <https://egazette.nic.in/WriteReadData/2019/210357.pdf>

- ✓ Initiate a pilot of international medical exam by using the International Foundation of Medicine Clinical Science exam (IFOM CSE) and basic science exam (IFOM BS).
- ✓ Expand IFOM CSE test to all 6th year students as second CSE pilot and all 3rd year students take BSE pilot in 2024.
- ✓ Legally require IFOM CSE passing grade before graduation and passing BSE for promotion to clinical year (4th) training.

#### **Ensure health workers have “decent work” that delivers a fair income (4)**

The International Labor Organization (ILO) defines decent work as “productive work for women and men in conditions of freedom, equity, security and human dignity”. In general, work is considered decent when: it pays a fair income; it guarantees a secure form of employment and safe working conditions. Five components of decent work are: (a) physically and interpersonally safe working conditions, (b) access to health care, (c) adequate compensation, (d) hours that allow for free time and rest, and (e) organizational values that complement family and social values. A MoH order, for example, provides support/finance for care of limited coverage to specialized care for healthcare workers, which should be considered for expansion.

At a minimum, salaries of healthcare staff should be comparable to remuneration of equivalently educated and skilled non healthcare positions. Government healthcare salaries should also be benchmarked to similar private healthcare positions.

A recent WHO<sup>78</sup> guide for the development and implementation of occupational health and safety programmes for health workers provides clear steps to be used in the development process. As occupational health and safety measures require a system for management, continuous improvement and regular dialogue and involvement of health workers a regular Short Message Service (SMS) (in the future a mobile app based) survey could be used to collect information from MOH health care workers. By systematic surveys of occupational health, safety issues, and job satisfaction of the health care workers, the MoH can monitor staff morale and experience of work conditions and then take targeted corrective actions.

##### **Specific actions:**

- ✓ Make appropriate adjustments in remuneration.
- ✓ Establish human resource policies that systematically seek feedback (e.g., bi-annual SMS surveys) on issues of occupational health and safety, working conditions and job satisfaction for healthcare workers. (See 3.1).

#### **Utilize task shifting to increase the efficiency of the health system and to ensure the accessibility of services for citizens (5)**

Efficiency and effectiveness of health services can be promoted through task shifting - through optimizing and expanding the roles of family physicians and creating more advanced level nursing positions. A competent, stable and lower cost workforce of experienced family physicians and specialized higher nurses can substitute for other health care professionals such as specialist physicians and health educators. Task shifting can also minimize inefficiencies created by frequent staff turnover. Given the difficulty in maintaining stable physician staffing of rural clinics, a program to develop a modern version of the former feldsher system using a combination of specialized nurses, eHealth (e.g., provider-to-provider teleconsultations) and coordination with local family medicine and multiprofile polyclinics and

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<sup>78</sup> WHO & ILO. 2022. *Caring for those who care: guide for the development and implementation of occupational health and safety programmes for health workers*. Geneva: World Health Organization and the International Labour Organization, Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://apps.who.int/iris/rest/bitstreams/1407943/retrieve>

ambulance points for backup, would lower the need for family physicians in rural settings. Research demonstrates that substitution of highly trained nurses for doctors in primary health care has been safe and equal in health outcomes.<sup>79,80,81</sup>

Task shifting is needed also within medical doctors' profession. Well trained family physicians can easily manage most of the problems currently assigned to polyclinic-based subspecialists. Polyclinics or community health centers in other countries run efficiently without full time subspecialists who are based instead at district or regional hospitals for necessary referrals. Uzbekistan should consider standardizing a multiprofile polyclinic attached to every district hospital where subspecialists from the hospital could see referral outpatients at appointed times and still carry out their hospital-based duties. This is a standard arrangement in most multiprofile hospitals in EU and North America, and informally carried out in most hospital settings in Uzbekistan.

In addition to task shifting, serious consideration should be given to improving efficiency in use of physician resources through evidence-based re-evaluation of staffing tables for hospitals and polyclinics. Many hospital-based physicians are underworked and there are multiple examples where roles could be combined. For example, there is not enough work for a laboratory physician in a single polyclinic. A laboratory specialist physician should be able to supervise at least two or three polyclinics, probably more, especially with the use of mobile phone consultations and once the laboratory system goes online with the electronic medical record.

Our recommended action is to create methodological guidelines for task shifting as the national regulation has been found as the main barrier for the task shifting.<sup>81</sup> National coordination and development of standard processes and guidelines are required to ensure that sufficient capacity building and evaluation of individual professionals' competences are conducted before duties are reassigned. Methodological guidelines created with help of international experts and local stakeholders guided by Ministry of Health are needed.

There is a need to review physicians' and nurses' competence requirements, the job descriptions and positions and transform them to correspond the internationally comparable level and content to better serve the population needs and to provide universal health coverage. This would be needed to be conducted with support of international experts and local stakeholders from all levels of healthcare, both public and private services as well as the educational institutions and professional associations. The MoH Transformation Center should be in lead of the process keeping in mind the future services provision.

Training programs that lead to the new knowledge and skills and performance of the tasks that are delegated nationally should be nationally developed and organized. The trainings should have a documented competency assessment. It would be advisable for physicians to confirm at each workplace that the knowledge and skills obtained through training ensure patient safety. Some of the trainings could be multidisciplinary for both family physicians and nurses. Training programs for practicing nurses in family polyclinics and family physician points could be targeted, for example, on following delegable duties: examining patient with ear related concern, giving health lifestyle advice in non –communicable diseases.

Task shifting also requires structural changes and support mechanisms. Currently there are no national evidence-based nursing clinical guidelines corresponding to the evidence-based medical guidelines, protocols, nor a documentation system that would support independent nursing practice in Uzbekistan.

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<sup>79</sup> Cochrane review.

<sup>80</sup> Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. 2005. *Substitution of doctors by nurses in primary care*. The Cochrane database of systematic reviews. 2005(2):Cd001271

<sup>81</sup> European Commission. 2019. *Task shifting and health system design. Expert panel report*. Directorate-General for Health and Food Safety, Publications Office. Available at: <https://data.europa.eu/doi/10.2875/42878>

When initiating more advanced roles for nursing professionals, nurses will need to be registered, have an identification in the e-health service system and be required to document the care provided so that the continuity of care is secured.

Templates and guidelines are needed for the practicing nurses in family polyclinics and family physician points having independent patient appointments to prepare for a family physician office visit. Nurses can also give healthy lifestyle advice based on the targeted screening of the population for documenting the patient assessment. The documentation would allow the results of screening as well as the identified health problems to be available for doctors to aid the care. This improvement would increase both patient safety and overall care.

**Specific actions:**

- ✓ Create national methodological guidelines to allow and facilitate task shifting.
- ✓ Organize nationally coordinated training for doctors and nurses to ensure safe task shifting.
- ✓ Develop extended job descriptions/positions (scope of practice) corresponding to international standards for all cadres of midlevel workers.
- ✓ Develop evidence-based practice guidelines on priority health areas for nurse practice.
- ✓ Develop documentation system for nursing services.
- ✓ Implement planned task shifting from doctors to bachelor trained nurses and from subspecialist physicians to family physicians with new staffing positions and competencies.

**Update and implement medical educational programmes to competency-based standards (6)**

To train physicians capable of assuming primary care roles after graduation, medical school curricula should adopt a competency-based curriculum focused on training family practice physicians. This will require a paradigm shift in the structure and philosophy of medical education in Uzbekistan. The concept of family medicine, so integral to the healthcare of the community, has not been integrated with the traditional medical mainstream education system in Uzbekistan. Virtually no general physicians or family physicians are involved in the education of medical students currently. Medical students are expected to become primary care physicians with job functions largely structured around general practice/family care without being formally introduced to the concept. As this will require a major paradigm shift in medical education for Uzbekistan, experienced expert assistance would be needed in making the transition from a traditional curriculum. There are dedicated professional organizations and international medical schools with experience in making such changes to collaborate with on such a major task. A National Transformation Center should lead the process which would also require international assistance. A framework for adoption of competency based medical education can be chosen from several well-established examples (i.e., ACGME (American College of Graduate Medical Education Core Competencies OR Generic Professional Capabilities Framework (UK) OR CanMeds). National pedagogical faculty will be selected for international fellowship training to ensure that future curriculum development, teaching faculty development and student assessment activities can be supported without continuous need for international consultants.

To ensure that the curriculum focuses on competencies necessary for a generalist primary care provider, all medical and nursing graduates should be trained with a curriculum that allows a smooth transition from student to provider in a primary care setting at graduation. Exposure to community based primary care settings during training should begin in the first year and continue throughout training. Clinical exposure is therefore directed towards ambulatory care skills, with greater emphasis on care of patients in the outpatient clinic or family practice setting and health promotion. Coordination with postgraduate curricula and additional clinical training will be necessary to address clinical competencies necessary for management of more complex hospitalized patients.

There are five major areas of competency in a competency based medical education (CBME) curriculum: 1) clearly articulated outcome competencies required for practice, 2) sequenced progress through milestones designated as defined, observable markers of an individual's ability along a developmental continuum, 3) tailored learning experiences with predetermined expectations of performance and transition criteria to ensure readiness for progression, including use of entrustable professional activities (important clinical work tasks that trainees need to be able to perform with supervision at a distance by the end of basic training), 4) it is important ensure all faculty understand the curricular changes are based on evidence-informed approaches utilizing lessons learned from multiple research disciplines and fields. Faculty therefore must receive specific training and support in teaching of competency based medical education (CBME), and 5) feedback and evaluation focuses on developing partnerships between the learner and the assessor based on the sharing of formative, coaching feedback that allows the learner to gauge their progress toward competence. Evaluation requires a more holistic and ongoing assessment of student performance rather than a simple formal summative examination.

**Specific actions:**

- ✓ Utilize international core competence framework to establish a revised state educational standard and competency-based curriculum for family practice oriented medical education under the guidance of National Transformation Center with collaboration of teams from each Medical Higher Educational Institution.
- ✓ Engage with international medical universities to partner in developing curriculum and faculty training
- ✓ Build capacity of current educational staff in competence-based pedagogy and assessment

**Improve clinical competencies of medical graduates by reforming clinical education (7)**

The most important component of the clinical years of medical school is the clinical rotation — often referred to as the "clerkship", or "practical" aspect of training which follows preclinical training. In Uzbekistan, this occurs mostly in years 4, 5 and 6. Students, under the direction of an experienced practitioner, are assigned responsibility for patients in various medical specialties including internal medicine (therapeutics), surgery, pediatrics, obstetrics and gynecology, psychiatry, general practice and emergency medicine. Students do initial evaluations of patients and follow them through the hospitalization taking an active role in monitoring and providing care under the direct supervision of faculty. Core clerkships typically include both inpatient and outpatient experiences. Clerkships do not need to be done exclusively in university clinics or hospitals and exposure to community health practices is beneficial. Students learn by doing rather than by listening. While lectures are used during clinical training years, they are not the core feature of the learning process. What is critical in these rotations is close faculty supervision of students as they evaluate and learn to manage clinical issues. Students are given progressively more responsibility in management of their patients as they gain experience. Close contact with faculty also permits ongoing assessment and feedback to students on achieving competencies. Students develop clinical reasoning and problem-solving skills that cannot be taught in a classroom or by walking through a hospital with a faculty member. For this reason, the ratio of faculty to students is critical. A faculty to student ratio of no more than 1:4 is necessary. Virtually no quality medical schools in the world graduate more than about 300 students per year.

Current yearly enrolment is far too large in most Uzbek MHEI and this prohibits adequate clinical teaching. If more medical graduates are needed than can be accommodated in existing MHEI limited by faculty to student ratios of 1:4, then it is more appropriate to start a new medical school rather than to overload existing medical schools. Alternatively, as a temporary measure, additional teaching hospitals, with necessary academic and local clinical faculty, can be recruited and students split between clinical sites so appropriate faculty to student ratios and student access to patients can be ensured.

A national target to graduate approximately 6000 new physicians per year is more than adequate and exceeds the graduation rates per 100,000 population in most other countries of the world. The focus

should be on quality not quantity of medical graduates. Total numbers of medical students trained each year should be stabilized by decreasing and limiting enrollment at the existing large HMEI (TMA, TPMI, Samarkand, Bukhara, Andijan) and shifting admissions to the newer community medical academies. The number of students authorized by the government is more than adequate and therefore, the practice of admitting “super contract” students, who are academically less well prepared, should be ended. These “super contract” students dilute resources available to teach better qualified medical students. Additionally, “super-contract” students are very unlikely to seek work as primary care physicians on graduation.

Graduating class size should be capped at 300, the same as the initial first year class size, and should not be increased by accepting transfer students. The recent phenomenon of admitting transfer students from foreign medical schools in Central Asia should be terminated. These transfer students are basically seeking a “back door” entry to Uzbek medical academies after failing to gain admission to those same academies and then begin their medical education in less selective universities in neighboring countries. By increasing the class size, the transfer students essentially dilute the training experiences of the more qualified students who gained admission directly. Class sizes should be maintained at the level necessary to provide a 1:4 faculty to student ratio and adequate clinical training opportunities throughout the medical school experience. There is simply no benefit to Uzbekistan to allow large numbers of poorly qualified students to gain entry after failing to meet standard admission criteria.

Similarly, admission of foreign students should be curtailed. Uzbek HMEI do not have excess capacity for training physicians who will not, after graduation, benefit the people of Uzbekistan. It should also be noted that very few (less than fifteen percent) of foreign graduates of Uzbek medical academies have been able to pass examinations required for licensure in countries like India.

As additional medical school spaces are needed to facilitate equal regional distribution of physicians and to make use of all medical facilities for clinical training of medical students, it is appropriate to establish additional smaller community based medical schools. This has already been done in Syrdarya where resources of an existing non-medical university are used for preclinical education and Oblast/Rayon level hospitals and polyclinics will be used for clinical training. This model has been used successfully for decades in the USA, Canada and other countries. There are several advantages. First, it promotes regionalization of medical training which improves recruitment of students from rural areas where they are likely to remain to practice after graduation. Oblasts with medical schools have significantly higher ratio of physicians to population than those without medical schools. Second, it is far less expensive to utilize existing teaching facilities and community hospitals and clinics to build a new medical school than to build a standalone medical college with university owned clinics/hospitals. Thirdly, it promotes the development and quality of medical services, particularly primary care, in rural areas. The greatest difficulty in starting new rural community based medical schools is attracting appropriate faculty for both pre-clinical and clinical training. Rotating faculty from the larger established medical schools for a month or two at a time to the new community-based schools would be one strategy to consider.

**Specific actions:**

- ✓ Limit annual admissions of MD (except public health) students to medical higher educational institutions to maximum of 300 per year. Limit graduation class to a total of 300 per year (both national and international graduates).
- ✓ Increase financial subsidy to larger medical higher educational institutions for 2 years to make up lost tuition fees. Provide financial subsidies to new community medical schools and hospitals to enable rural sites to hire new faculty and pay academic faculty recruitment bonuses. Local community faculty paid stipends for clinical teaching.
- ✓ Build 5-6 additional community based medical institutions with intake of 150-200 students per year rather than expanding the existing state medical universities. (Example Gulistan State University, Syrdarya).

- ✓ Students will participate in management of at least three new patients per week on inpatient services and three patients per day on outpatient rotations. Only one student per patient.
- ✓ Clinical faculty, including community non-academic clinical instructors, receive at least 6 hours per year of instruction and practice in bedside and small group teaching.
- ✓ Modify bedside teaching role for faculty so they spend at least two hours a day with students in bedside teaching in no more than 4:1 student to faculty ratio on clinical rotations.

### **Improve clinical competencies for primary care (8)**

Nearly all developed countries now require at least one year of supervised clinical practice (Internship) for new medical graduates before a full license is granted to practice medicine. In Uzbekistan, primary care physicians are currently licensed immediately on graduation. At a minimum, a full year of a “rotating” internship with supervised direct care exposure to both inpatient and outpatient medicine should be required as it is in all EU and similar countries. Of note, primary care or family medicine training in many countries lasts several years after medical school so a one-year internship should be seen as a minimum training period and as an intermediate step towards requiring two or three years of clinical residency training for all physicians in primary care practice.

A full residency program in Family Medicine would offer great benefits to training of primary care physicians and organization of district level health services. Fully trained Family Medicine physicians will allow more efficient staffing of polyclinics and district hospitals by facilitating task shifting from subspecialists. There are well established Family Medicine residency models in the UK, Australia, Canada, and United States (amongst others). As one example, the following are the requirements of a Family Medicine Residency Curriculum in the USA per the ACGME<sup>82</sup> and Assessment of Family Medicine Residents is also accomplished through competency-based evaluations<sup>83</sup>.

Additionally, Family Medicine should be incorporated as an academic department in all medical universities (MHEI). India has recently done this through the India National Medical Commission Act, 2019 which mandates the promotion of training in family medicine at both undergraduate and postgraduate levels.

#### **Specific actions:**

- ✓ Establish and require a paid internship year (directly supervised clinical practice) in multiprofile hospitals and polyclinics after medical school for primary care physicians before they are licensed to practice alone.
- ✓ Establish, jointly with international partners, Departments of Family Medicine in each Medical Higher Educational Institution with at least three faculty in each in collaboration with international medical schools.
- ✓ Establish five (5) joint three-year residency programs (Master) in Family Practice following UK/Australian/Canada/US partner model and utilising new medical schools and community multiprofile hospitals and polyclinics. Include government physician salaries equivalent to subspecialists for graduates.

### **Introduction of new advanced professional educational programmes consistent with leading to Baccalaureate, Masters and PhD for nurses, and other mid-level professions (9)**

Qualifications and positions for nurses and other mid-level professions, and modernization of educational programs to international standards should be conducted in coordination with recommendations on task shifting. Internationally, non-medical professions have a career path leading to Doctor of Health Sciences or Doctor of Nursing Science. The European Union (EU) Bologna process, to which Uzbekistan has committed, contains a principle of lifelong learning in which each profession has the pathway to a doctoral degree. Correspondingly, in developed countries, they have appropriate positions, qualifications and

<sup>82</sup> ACGME Program Requirements for Graduate Medical Education in Family Medicine

<sup>83</sup> Family Medicine Milestones The Accreditation Council for Graduate Medical Education

remuneration established in the health care system. In the EU, all regulated health professionals (nurse responsible for general care, midwife, physician, dental practitioner and pharmacist) qualifications follow Directive 2005/36/EC. We also recommend for Uzbekistan to follow this directive in order to support collaboration with European educational institutions to facilitate the development of the nursing practice to meet international standard level.

The following section will describe suggested educational pathways for nursing and midlevel positions in healthcare. Prior to that detailed description, it is necessary to outline our perspective on the future of nursing and the various levels and roles that nurses will play in the future. We recognize that the transformation we propose will likely take decades to complete but that educational changes should be instituted now to make such a future possible. The future roles and positions for nurses are suggested to be a) the practical nurse also known as the LPN or licensed practical nurse, b) a nurse responsible for general patient care (also known as the RN or registered nurse), c) a specialized nurse with bachelor's degree in nursing science, d) a nursing teacher and/or manager with a Master's degree in nursing science and e) a nurse scientist and researcher with Doctoral degree in nursing science.

We have outlined here some examples for the future scope of practice and the main differences between the roles nurses with different levels of education would fill in the healthcare system.

- Practical nurses (licensed practical nurses) would be similar to the medical college trained nurses that today form the vast majority of the Uzbekistan nursing workforce. As of today, they will work in hospitals and family polyclinics in assistive roles under the direction of a physician. In the future they could also work under the supervision of a RN (registered) nurse. Practical nurses support in the preparation and delivery of diagnostic and treatment interventions, monitor basic patient vital and other signs and make patient progress reports as appropriate to physicians or registered nurses (RN). Practical nurses would also support patients and citizens with activities of daily living and convey routine health information.
- The nurses responsible for general care (Registered Nurse) would become, over time, the majority of the nursing workforce. They would work in family polyclinics as practicing nurse leading the other nurses in medical brigade and counsel the population in healthy lifestyle and the care in non-communicable diseases. This would be the first nursing priority in the improvement of the quality of primary health services. The nurse responsible for general care has competencies and role, for example to empower individuals, families and groups towards healthy lifestyles and self-care, to independently initiate life-preserving measures and, to independently give advice to instruct and support persons needing care.<sup>84</sup> In hospitals, the RN would work as charge nurse and the team leader for LPNs.
- Specialized nurse positions for bachelors trained nurses would be created in primary health care for a family practice nurse, and for midwives. Additionally, these specialized bachelors trained nurses in regional and national level hospitals would serve in highly technical areas like ICU, anesthesiology, operating room and as triage nurses in emergency departments. The specialized nurse is able for example to analyse complex clinical problems with the use of relevant knowledge, diagnose, initiate and evaluate treatment for patients in a multi professional arena, within the field of specialisation following agreed protocols; to operate within an extended practice role in order to carry out advanced treatment, diagnostic and invasive interventions as related to the field of specialisation; and to identify health promotion and education needs for patients within the field of specialisation.<sup>84</sup> Specialized nurses could work with limited or remote physician oversight (as in rural primary care clinics) or in direct collaboration with physicians (as in anesthesiology or other operating room roles). Of note, most nurses in the EU and North America have bachelor's in nursing degrees and today account for the majority of all nursing positions.
- The positions for which a master's in nursing science would be required are chief and head nurse positions in health care institutions, teachers and professors of nursing in the 11 higher medical educational institutions, 47 technicums and 27 colleges as well as research and administrative roles in governmental organisations. After 5-10 years, when the needs of nursing education and administration work are satisfied, and there are 10-20,000 higher (bachelor) nurses, then Advanced Nurse Practitioner<sup>85</sup> positions, which are also master's degree level, could be developed in Uzbekistan. Of note, there are over 325,000 Advanced Practice Nurses today in North America, accounting for over 10 percent of the nursing workforce.

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<sup>84</sup> European Federation of Nurses. 2017. *Workforce Matrix 3+1. Executive summary*

<sup>85</sup> International Council of Nurses. 2020. *Guidelines on Advanced Practice Nursing*

- The roles of the PhD holder in Nursing Science are to develop the nursing science, to steward the discipline of nursing, and to educate the next generation of nurses. Doctoral level nurses would typically represent about 1 percent of the nursing workforce.

**We recommend that Uzbekistan will have five levels of nursing education:**

1. The entry level after 11 years of education to nursing should be **the licenced practical nurse (LPN)**. In EU, the training duration is two or three years, in UK<sup>86</sup> and in Canada 2 years.<sup>87</sup> LPN works under the direction of physician or registered nurse to perform basic health care and assistance in hospitals, primary health care and nursing homes for patients that are sick and injured as well as healthy people in kindergartens and schools. *In Uzbekistan, the two-year technicum level programs that are targeted to emergency, patronage and sanitarian etc. could lead to licenced practical nurse qualification.*
2. The main nursing workforce in Uzbekistan, should be educated to meet the standards of a Registered Nurse (RN) in Europe. The EU-Directive on the recognition of professional qualifications sets the requirements for the training of nurses responsible for general care. The training should be at least three years of study, the duration of the theoretical training representing at least one third and the duration of the clinical training at least one half of the minimum duration of the training. The clinical training shall take place in hospitals and other health institutions and in the community, under the supervision of nursing teachers, in cooperation with qualified nurses. Our recommendation is that the technicum 3-year nurse education should lead to qualification as a licensed general care nurse (equivalent to a registered nurse (RN) in Europe). The 11 years of general education should be the entry requirement.
3. As established in the Bologna process, after 11 years of general education, one should be able to continue directly to higher education. It would therefore be logical that Bachelor nursing education in Uzbekistan would also begin directly after 11 years of general education and proceed directly to university rather than requiring a technicum program first. The four-year university training leading to a higher nursing degree would give EU-directive competences as well as specialization for either Midwifery, Emergency, Family practice or highly specialized care. It is noteworthy that the EU-Directive requirement for midwife is a 3-year program after a 12-year general education or 18 months after the general care nurse education. Midwifery education should follow the competence requirements of ICM 2019. Through recognition of prior learning and development of fast-track (accelerated) programs for experienced nurses, on-the-job training using evening and online teaching could be used to reach a higher nursing degree. Our suggestion for Uzbekistan is to have a bachelor level program which leads simultaneously to both a RN and specialist qualification (midwife, family nurse, emergency etc.). The nurses would have two licences: the registered nurses licence based on the three-year education and a specialist based on the included fourth year of education. Through curriculum comparison and recognition of prior learning year the fast-track program for experienced nurses might be 120 ECTS after 3-year technicum studies and 180 ECTS after 2 years education. Especially in rural family points the nurse specialized in family practice could have independent appointments.

<sup>86</sup> Nursing and Midwifery Council. 2018. *Nursing associate proficiency standard*

<sup>87</sup> College of Licensed Practical Nurses of Alberta. 2020. *COMPETENCY PROFILE For Licensed Practical Nurse*. Fifth Edition - February 2020.

4. Master's in nursing or nursing science education in Uzbekistan should be a two year 120 ECTS programme. The bachelor's degree in nursing gives the eligibility to master studies. A two-year post graduate level education is necessary for the development of academic scientific skills in addition to thorough knowledge of contemporary nursing science and management.
5. For PhD in nursing science, the AACN (2010) recommends emphasizing areas such as nursing education and science leadership and also to construct clear competences for the domain of nursing. "Within an international context, the graduate is able to conduct research, development and teaching tasks at academic, health care settings and other organizations where a broad and detailed knowledge of research in nursing science is required. Their research will use appropriate research methods and yield a research effort that equals the international standard for doctoral studies<sup>88</sup>. The eligibility to pursue PhD in Nursing science is obtained through master's in nursing or Nursing science or organization and management of nursing. Our recommendations are that the doctoral degree in Nursing science would not lead to a clinical role, be at European Qualification Framework level 8 and would require at least 3 years of study.

Whether to launch a Health Care Assistant (HCA) education program in Uzbekistan has been discussed between experts and the MoH. Typically, in Europe, HCA education is at European Qualification Framework level 2 to 4 (in UK level 3 with 2-year training and in Germany 1 to 2-year, in Finland the education is 1 year). HCA work under the supervision of the general care nurse. They are not allowed to be involved in medication of the patient or work alone in their shift in Finland. The working places of HCA assistants are mainly in the institutions of elderly care in countries where there is a deficit of Registered Nurses<sup>89</sup>. Our recommendation is to do a careful need analysis if there is really a need for this position and education in Uzbekistan as the elderly in Uzbekistan are typically cared for by the family and not in institutions.

In order to improve the academic standing and prestige of mid-level health fields, Uzbekistan should acknowledge health sciences such as nursing, as equivalent to medicine in the classification system concerning sciences and educational programs. This should permit a career path that leads to a PhD for non-physician professions. Nursing science should be added along with other health sciences.

The curriculum revision and development according to international standards should be conducted with the support of international experts from higher education institutions where competence-based pedagogy has been used. In addition, it is recommended to interact with the global professional associations of each profession: for midwives with International Confederation of Midwives and European Midwives Association, for physiotherapists education with World Confederation of Physical Therapists and International Private Physiotherapy Association, for biomedical laboratory scientists with International Federation of Biomedical Laboratory Science, International Organization of Societies for Electrophysiological Technology, and European Association for Professions in Biomedical Science. It is also very important to empower and increase participation of Uzbeks within the international professional community of nurses, midwives, paramedics, public health, pharmacy, and physiotherapy specialists.

Nursing should be taught by nurses. This is the standard in the EU and North America. Currently physicians are responsible for nurse training as there are insufficient academic nurses to provide the numbers of nurse faculty needed. To remedy this situation, programs to develop additional nurse academic faculty should be prioritized. Nursing is a profession with its own approach to human health and the evidence-

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<sup>88</sup> Tuning. 2018. *Guidelines and Reference Points for the Design and Delivery of Degree Programmes in Nursing*

<sup>89</sup> Eurodiaconia. 2016. *The education, training and qualifications of nursing and care assistants across Europe*

based clinical methods that nurses use in their practice. Therefore, nursing and other non-medical faculty need training in competence-based pedagogy, and on the international qualification requirements of each profession. Capacity building is needed to support the implementation of these new curricula for each semester as they are implemented for the first time. In addition, the increased requirement that clinical practice be 2300 hours in an authentic patient care environment mentored by nurses requires the development of a mentor trainer program. All nurses that mentor nursing students should have passed the mentor training to ensure the quality of clinical learning. Clinical supervising and mentoring nursing students have been widely studied.<sup>90</sup> Online training programs are available (for example <https://acmhn.org/competent-clinical-supervision/>) and the guideline developed for EU<sup>91</sup> or Kazakhstan could be used as reference point.<sup>92</sup> Jointly implemented two-degree master programmes will support the capacity development of the faculty staff both in content as well as for modern pedagogical methods and ensure the quality of future graduates especially in research.

**Specific actions:**

- ✓ Create competence-based educational standards for technicum, bachelor and master levels for midlevel workers that fulfil the international standards in collaboration with international experts.
- ✓ Increase the knowledge and skills of nursing faculty in technicums and Higher education institutions regarding international requirements, and competencies of midlevel professionals, mentorship, and competence-based pedagogy in each semester.
- ✓ Increase the number of state grants for Bachelor and Master level Nursing education.
- ✓ Implement Joint Bachelor and Master programmes with leading foreign universities for capacity building of faculty for training of Nurses, Midwives, Physiotherapists, Laboratory nurses, Radiology technicians and Public Health Epidemiologists.

**Include competency in reading English in criteria for clinical training and graduation of physicians (10)**

As virtually all important biomedical research, and evidence-based clinical guidelines and medical textbooks are written in English, it is crucial for future physicians to be able to at least read English with fluency. Specific levels of language competence for admission can be determined with commonly used international language tests and be coordinated with additional English language instruction during medical school. As a target for entry into the clinical years (starting with year 4), students should be required to meet commonly accepted scores required for admission to international universities. To ensure that students achieve necessary English reading competence, additional language courses should be incorporated into the first three years of medical education.

**Specific actions:**

- ✓ Improve the English studies of medical students during their preclinical years and require minimum reading comprehension (e.g., TOEFL score 20) for advancement to clinical training.
- ✓ Set requirements for all courses to contain English language learning/reading material.

**Develop faculty expertise in clinical epidemiology and implementation science through international study and partnership agreements with collaborating medical universities (11)**

Clinical Epidemiology and Implementation Science are two research areas that can contribute to improving the quality and efficiency of healthcare delivery, patient safety and public health. Both are currently underdeveloped in Uzbekistan and should be made high priorities for the future. Neither clinical epidemiology nor implementation research require investments in laboratories or other expensive items.

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<sup>90</sup> Mikkonen, K., Tomietto, M., Kääriäinen, M., Oikarainen, A. et al. 2019. *Development of an Evidence-Based Nurse Mentor's Competence Model*

<sup>91</sup> Oikarainen, A., Mikkonen, K., Juskauskienė, E. et al. 2021. *GUIDELINE on clinical nurse mentor's mentoring competence development*

<sup>92</sup> Heikkilä J, Tiittanen H & working group. 2019. *Руководство по клинической практике студентов прикладного академического бакалавриата по специальности "Сестринское дело" в Казахстане*

Both can be done practically in even small clinical facilities with minimal investment other than appropriate training and preceptorship.

Clinical epidemiology is a subfield of epidemiology specifically focused on issues relevant to clinical medicine. The movement toward evidence-based medicine and evidence-informed decision-making in healthcare is a direct derivative of the field of clinical epidemiology. Clinical epidemiology is generally focused on applied decision-making, for the purpose of improving patient-level outcomes. Classical epidemiology is generally focused on the distribution and determinants of disease (population level), while clinical epidemiology is the application of the principles and methods of epidemiology to conduct, appraise, or apply clinical research for the purpose of improving prevention, diagnosis, prognosis, and treatment of diseases in patients. Implementation science is the study of methods and strategies that facilitate the uptake of evidence-based practice and research into regular use by practitioners and policymakers.

The most efficient way to develop these areas of healthcare research would be to establish local expertise in clinical epidemiology and implementation science. This can be accomplished by sending junior faculty for training overseas and/or by establishing joint training and research programs in Uzbekistan with international partners. Multiple countries such as UK, Australia, Canada, US and others have well developed training programs that Uzbekistan can emulate.

As clinical epidemiology and implementation science are core elements of modern evidence-based medicine, patient safety and quality improvement activities, academic Clinical Epidemiology and Implementation Science departments should be established in selected MHEI and faculty appointed. These departments would then become hubs for consultation with other faculty on study design, data management and analysis and also to assist in preparation of quality research papers. Faculty development could take several paths. International fellowships to existing centers of excellence (Oxford, Toronto, Boston, Bangkok, and many others) would allow intense study. Internet based courses are also available. Collaboration with international schools would also be possible with workshop-based training programs at beginner and advanced levels to be delivered periodically in Uzbekistan. Development of these departments and research hubs can be supported by allocating 20 percent of the national healthcare research budget.

**Specific actions:**

- ✓ Establish Departments of Clinical Epidemiology and Implementation Science in five large Medical Higher Educational Institutions as joint programs (train the trainer) with international universities. Hire 20 faculty (2 senior and 2 junior faculty per academy).
- ✓ Fund faculty development fellowships for international training for nominated faculty to become qualified in clinical epidemiology and implementation science.
- ✓ Ensure that at least 20 percent of the national medical research and faculty training budget (or earmarked funding from other research funds) goes to clinical epidemiology and implementation science research and faculty training.
- ✓ Establish research methodology hubs in departments of Clinical Epidemiology and Implementation Science to support all higher medical educational institution faculty to design studies, analyse data and to publish in recognized international biomedical journals.

**Ensure that faculty have protected time for research and writing publications (12)**

To develop and carry out clinical research projects, faculty need protected time. Clinical teachers should have a career pathway that permits promotion through publication of educational research rather than the traditional focus on requiring biomedical science publications. Access to medical literature is critical for both learning and research so all faculty and students should have fulltime access to one of the many online medical literature compendiums.

**Specific actions:**

- ✓ Allocate at least ~ 20 percent of faculty time (average one day per week) devoted to research.
- ✓ Research publication costs paid by educational institutions.
- ✓ Ensure access 24/7 to library facilities with computer, internet and access to medical databases

**SUMMARY OF CHALLENGES AND RECOMMENDATIONS FOR HUMAN RESOURCES**

<b>BIG PICTURE</b>		
	<p><b>THE MOH NEEDS TO</b></p> <ul style="list-style-type: none"> <li>○ Adopt a unified approach to health workforce planning and management to ensure health workforce development is responsive to population and service needs and to strengthen health workforce production and regulation.</li> <li>○ Ensure adequate numbers, equitable distribution, task shifting, retention and skill mix of health workforce with motivation and productivity.</li> <li>○ Improve the quality of education and training to meet international competency requirements for medical and other health care workforce.</li> <li>○ Build the research capacity in medicine and other health sciences through development of clinical epidemiology and implementation science programs at all medical higher education institutions and major hospitals.</li> </ul> <p>With these attributes, the MoH will be in a better position to respond to three key challenges, as below.</p>	
	<b>CHALLENGES</b>	<b>RECOMMENDATIONS</b>
<b>1</b>	<p><u>Relatively low competencies of health care workers shape public scepticism about the performance of Uzbek healthcare</u></p> <ul style="list-style-type: none"> <li>• Uzbekistan does not meet current international standards to ensure qualification of medical graduates prior to entering clinical practice.</li> <li>• Despite CME requirements Uzbekistan has no requirements for certification to maintain licensure.</li> <li>• The current HR system cannot track individual healthcare workers through their careers to follow their qualifications and quality of services.</li> <li>• Graduates of Uzbekistan medical universities are ill prepared to assume independent primary care clinical roles upon graduation.</li> </ul>	<p>Improve clinical medical education at baccalaureate level; add a rotating clinical internship for all medical graduates before they enter primary care practice; establish clinical residency programs in family medicine.</p> <p>Require recertification of physicians every five years with minimum hours of documented continuing professional development coursework.</p> <p>Reeducate the public to understand that well trained primary care providers in outpatient clinics are better equipped to handle typical patient complaints than subspecialists.</p>
<b>2</b>	<p><u>2.2. Family physicians and mid-level health care workforce (nurses etc) capacity is both underdeveloped and underutilised in comparison to developed countries, which leads to inefficiencies in use of limited healthcare resources.</u></p>	<p>Utilize task shifting to increase the efficiency of the health system and to ensure the accessibility of services for citizens.</p>

	<ul style="list-style-type: none"> <li>• Adequate numbers of physicians are available but too often poorly trained, maldistributed and inefficient.</li> <li>• Excessive use of subspecialists in primary care roles is inefficient.</li> <li>• There are plenty of nurses, however, their educational level is low and scope of practice in health system is assistive.</li> <li>• At present the traditional roles of physicians, nurses and other healthcare workers do not always correspond to the needs of modern community health services.</li> </ul>	<p>Develop extended job descriptions/positions (scope of practice) corresponding to international standards for family physicians and all cadres of midlevel workers.</p> <p>Update and implement medical and nursing educational programmes to competency-based international standards.</p> <p>Improve primary care in polyclinics and doctor points so patients do not bypass primary care.</p>
3	<p><u>Existing biomedical research is poor quality and not focused on the specific healthcare needs.</u></p>	<p>Plan for introduction of clinical research training through development of clinical epidemiology and implementation science training capacity in Uzbekistan</p>

## PAPER 5: Digital Health

### Introduction

Digital health refers to tools and services that use information and communication technologies (ICTs) to improve prevention, diagnosis, treatment, monitoring, and management of health-related issues and to monitor and manage lifestyle habits that impact health. In Uzbekistan, digitalization is one of the top priorities in the national reform agenda. The national strategy *Digital Uzbekistan 2030* is set to strengthen digital governance structures, create robust integrated platforms for the development of information systems, and establish the requisite broadband network infrastructure in conjunction with other government departments.

Importantly, digital health and healthcare digitalization should be understood as a health system transformation enabler, rather than a goal in itself. International experience has shown that successful implementation of digital interventions is used to improve service delivery, governance, quality of care, and support administration and performance of pharmaceuticals and medical devices, health financing, public health, and human resources.

This document describes the key challenges (Section 2: Situation Analysis) in the field of digitalization, lays out high-level objectives for digital health, and provides recommendations and actions (Section 3: Recommendations and Actions), which will support and steward healthcare sector transformation and improve population health. The key challenges, recommendations, and actions proposed below are based on the outcomes of the digital health master plan, which was prepared in 2021 and built on the extensive analysis of the current situation, actual needs, national digitalization strategy, and global best practices.

### Situation analysis

The current situation. The success of new digital health initiatives is premised on an accurate assessment of current ICT landscape, existing healthcare service provision environment, recent policies, and normative acts as well as related challenges in the health sector. An assessment to identify these was carried out through field surveys, document reviews, and key stakeholder consultations. The assessment included an evaluation of the health reform pilot in Syrdarya region, a study of the available internet connectivity and ICT infrastructure in the country, national and facility level e-health applications, national health information management system, national policies, and legislation, including use of internationally recognized health data and data exchange standards, regulatory framework on privacy and data protection, electronic signature and electronic documents.

The current situation assessment has revealed a number of challenges with respect to the health sector digitalization in Uzbekistan.

These relate to the following aspects of ICT usage in the health sector:

- *Internet connectivity*: to date, up to 81 percent of public medical organizations' legal entities have been provided with internet connectivity. However, the quality and reliability of the internet significantly vary, especially in rural areas.
- *facility networking*: the phased-based installation of local area networks in healthcare facilities is in process and currently covers 6 regions, the remaining facilities are planned to be finalized by the end of 2023.
- *national IT systems*: there are more than 35 not connected nationwide IT e-health systems. However, there is no integration or common master data usage amongst MoH information systems, no national patient register, or healthcare providers register. Each system maintains its

lists, classifiers, and nomenclatures. Therefore, integration of the IT systems used in facilities is not feasible.

- *local facility IT systems*: a limited number of healthcare facility level systems, such as Patient Administration System, EMR, or HIS are used in public and private HFs. Under the initiative of MOH, two PAS/EMR<sup>93</sup> systems have been piloted in Syrdarya region. About 5 active local PAS/HIS<sup>94</sup> vendors provide their services to public and private outpatient clinics and hospitals.

The situation analysis has revealed five key underpinning challenges impeding successful application of ICT and, more generally, digital transformation of the healthcare sector:

1. Health care providers, managers, and administrators are not able to take data-informed actions due to the lack of reliable and up-to-date administrative and public health data. The health information system is predominantly paper-based and relies on the hierarchal reporting system inherited from the Soviet Union. Currently, there is no integration or common data usage amongst MoH organizations, which hinders the digitalization process. There is no single registry of patients, no single registry of medical organizations, and no single registry of healthcare workers on a national level (currently, in the making).
2. Fragmented and often unavailable patient clinical data results in inefficient health service delivery, duplication of provided services, and leads to a narrow one episode-focused treatment approach. Medical records are in paper format and scattered around healthcare facilities. As a result, neither patient nor GP / family doctor or specialized clinician is in a position to obtain a full picture of her medical history.
3. Patient is not in the driver's seat of his well-being and treatment process. Patients' possibilities to manage their digital health journey are mostly non-existent. Partially, electronic booking of outpatient services has been implemented, but not widely spread. Health digitalization shall be accompanied by the provision of access and management functions to patients.
4. There is no centralized health digitalization governance. Currently, the process of health digitalization planning and managing is performed solely by MOH and its special purpose IT-focused company IT Med. There is no independent body tasked to oversee the development of digital health with the representation of hospitals, clinics, doctors' associations, and patient associations. The conditions and the process are often non-transparent to external participants.
5. The existing ICT infrastructure of the health sector is inadequate for the ambitious health digitalization plans. To date, most healthcare facilities are under-equipped. The latest surveys have shown that more than 50 percent of public medical organizations do not have local area networks (except administration offices), and the estimated global need for computers to be procured is estimated from 30.000 to 65.000 PCs. The existing ICT equipment is not maintained, and there are no employed ICT maintenance specialists on the facility level nor contracted external companies. Finally, there are no sufficient data center capacities even for the current level of national digital health systems.

## **Recommendations and actions**

### **Vision and underlying principles for the development of digital health (1)**

The government of the Republic aims to improve population health through enhanced access to safe, reliable, effective, appropriate, and affordable care for the whole population.<sup>95</sup> Through efficient digital health interventions, MOH will support the delivery of high-quality, accessible, and timely healthcare

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<sup>93</sup> PAS – patient administration system, EMR – electronic medical record

<sup>94</sup> HIS – hospital information system

<sup>95</sup> Decree of the President of the Republic of Uzbekistan No. UP-5590 of December 7, 2018 "About complex measures for radical enhancement of health care system of the Republic of Uzbekistan"

services, instrumentalize public health operations and will guide the adoption of universal health coverage in Uzbekistan. Deep digital transformation of the healthcare sector under the guidance and leadership of MOH will enable informed and data-driven decision-making, which is backed by reliable, robust, secure, and interoperable digital health systems.

The outcome will be twofold: (i) created ICT infrastructure with the ecosystem of interconnected digital health applications, and (ii) digitally transformed service delivery, operation, and management of the health sector to support population health goals.

The creation of a national digital health ecosystem is not a once-off process but rather a systematic, continuous, incremental activity. At any point in time, digital health, as a part of the wider healthcare system context, may be contested with new challenges and shall adapt accordingly. Therefore, as it is seen in other countries, the creation of digital health shall be considered not as a strictly defined project with a start and finish date but rather as a clearly governed and constantly evolving initiative. For instance, most countries in Western Europe have been actively developing digital health for about 10-20 years, creating and implementing new systems on national, regional, and health care facilities levels.

To achieve effective digital transformation and minimize the risk associated with the application of innovative technology, the MoH shall fulfill the core principles of digital transformation, and benefit from the lessons learned from international digital health projects.

#### **Specific actions:**

- ✓ Start with a small scope. Create an implementation timeline that breaks the development of e-health into phases.
- ✓ Avoid vendor lock and proprietary data formats. Shortcuts in health digitalization are often disastrous. A number of known attempts, such as nominating a single-the-very-best vendor for the main healthcare digitalization components, or relying on powerful but closed-data systems, or ambitious big-bang approaches, all without exceptions, led to project failures and wasted time and money. For example, the global project to introduce e-health in the UK was a recognized failure, with an estimated loss of £9-11 billion.
- ✓ Build the foundations first. Prioritize core components of the Digital Health Platform, such as registries, clinical document repositories (EHR), and health data exchange services.
- ✓ Ensure alignment and integration. Digital interventions can often evolve out of sync. Health facility computerization may be completed years before IT systems are ready to use, or IT systems for hospitals are implemented way before registries and clinical data exchange standards are established. Lack of synchronization leads to a significant waste of financial and human resources.

Considering the global best practices listed above, the following implementation approach to digital health interventions in Uzbekistan must be taken by the MOH: health system digitalization and its digital transformation shall be performed systematically, in well-planned iterations, placing in its center an interoperable digital health platform (DHP) that exchanges and stores data in a standardized way. The digital health platform, and its internal and external applications shall exchange data relying on open international standards. Implementation of any added-value digital health applications, such as hospital information systems, e-prescription, or e-referral, shall be conducted as a part of the overall national digital health ecosystem, being able to exchange data with DHP and ensure its meaningful use.

To achieve this implementation approach, the individual digital health projects shall be aligned and sequenced accordingly together with the activities of enabling strategic areas, i.e., governance, legislation, and capacity building.

It is important to note that all strategic areas of health digitalization are interrelated and time-dependent. First, a sustainable governance structure shall be established, which will oversee the strategic vision and coherent implementation of digital health activities. Next, the availability of ICT infrastructure, both central and on the facilities level, is a prerequisite for the meaningful use of digital health interventions. Similarly, the creation of the Digital Health Platform's core components lays a foundation for the rest of digital health applications. Only when the core parts of DHP - national registries, clinical data repositories,

and health data exchange interface – are ready for use, digital health apps can be interconnected and rolled out. Then, the rollout of large-scale digital health projects, like e-prescription, e-referral, and digitalization of public health facilities will correlate with the pace and readiness of both IT and non-IT factors, such as ICT infrastructure readiness in facilities, achievements of IT training, the readiness of regulatory framework to name a few.

### **Establishing Digital Health Governance structure on national and regional levels (2)**

Governance is a key element for sustainable development and maintenance of digital health. Experience of the countries, which had advanced in digital health, suggests establishing an intra-institutional agency – a “digital health board”, which is represented by the administration on national and regional levels, health practitioners, and patients. Similar boards have been created and operate in Estonia, Denmark, Austria, and other countries. In some countries, the board is established in the form of a legal entity, in other countries - within the already existing legal structure of MOH or other governmental bodies.

Accordingly, the MOH needs to establish a board that is authorized to plan and oversee the implementation of digital health interventions. The digital health governance body shall define policies and the roles of digital health development actors. It will approve the business plan and financing model for the development and operation of the digital health ecosystem in Uzbekistan.

#### **Specific actions:**

- ✓ *Establish a national digital health governance board with advisory and management functions.* As a first step, create a temporary Digital Health Management Unit (DHMU) based on IT Med and MOH experts with the involvement of additional local and international clinical, legal, and medical IT experts, and representatives from specialized agencies and the Ministry of Information and Communication. At a later stage, establish an independent digital health board. To fulfill the actual needs of health practitioners, the DHMU/board should ensure clinical engagement in the implementation of digital interventions. Finally, the board should provide the approval of proposed digitalization projects and recommendations for a regulatory framework, strengthening patient data protection and cybersecurity measures.
- ✓ *Review and optimize legacy data information flow and reporting processes.* The mere digitation of existing paper-based processes should be avoided. The underlying data flows and reporting processes within the healthcare sector should be reengineered and optimized. When converting paper-based processes to modern, efficient organizational workflows, process efficiency methodologies, such as Lean and Kanban, should be utilized. Whilst optimizing the processes and data flows, it is equally important to ensure compliance with health-tech standards, which will secure national investments in the technology, secure ownership of healthcare data, and prevent vendor-lock situations.
- ✓ *Expand digital health implementation and change management capacity at regional levels.* In addition to the national Board, regional governance and leadership should be institutionalized and tasked to gather the requirements of end-users; to facilitate change management and subsequent e-health systems’ take-up. The regional digital health management units will lead the implementation and rollout of the digital transformation projects.
- ✓ *Establish IT training through continuous education in healthcare facilities.* The planned new IT systems will require adequate end-user training, which should be systematically rendered starting from the initial IT system provision, and later, through continuous digital education at the workplaces directly in the healthcare facilities or self-paced remote learning.

### **Empower health care providers, managers, and administrators through digital transformation and administrative data exchange (3)**

To effectively manage the healthcare system, accurate and up-to-date data on health services, the inventory, health professionals, patients, and resource utilization (beds, ICUs, diagnostic equipment) is required. The MOH needs to create a national digital health platform (DHP) to enable patient administrative, health system resources, and financing data collection, exchange, and analysis.

According to international recommendations of WHO and International Telecommunication Union (ITU), as well as, relying on examples in Austria, Scandinavian countries, Slovenia, Spain, and many others, a

national DHP shall not be a monolithic one-covers-all system. On the contrary, the platform is a set of interconnected registries, HER, and supporting systems, which, due to the adoption of common interoperability standards, can be supplied and maintained by different manufacturers.

Digital transformation streamlines the processes, optimizes the utilization of resources, and reduces the inefficiencies of healthcare organizations. To benefit from digital transformation, with the leadership of MOH and its regional departments, a change management process shall be established to introduce reengineered and optimized administrative processes, such as patients' referrals, appointment booking, patient admittance to the hospital, operation planning, discharge process, medications stock management, billing, and costs reimbursement.

#### **Specific actions:**

- ✓ *Establish basic healthcare registers and cadasters for unified identification and reporting.* The foundation of the digital health ecosystem is erected on the key registers, which enable the identification and holding of actual key data of the main participants of the health system, i.e., patients, health practitioners, and health facilities. To this end, a national patient registry containing all residents of Uzbekistan shall be established as well as registries of medical organizations and healthcare workers. It is important to follow the recommendations of WHO and Intensive Therapy Unit (ITU) on the standardization and data exchange protocols, which shall be implemented and supported by healthcare IT systems.
- ✓ *Introduce a national Medical Information System based on standards to facilitate digitalization in the primary and secondary healthcare facilities.* The rollout and usage of a standardized national Medical Information System, which covers patient administration functions, will ensure the provision of in-time data for policy-makers and will greatly benefit in increasing efficiency and transparency, and data-informed decision making. The health care administrative data shall cover information about encounters, whether through a visit to a physician's office, a diagnostic procedure, admission to hospital, or receipt of a prescription at a pharmacy and serve as a data source for performance and administrative processes quality indicators. For example, similar systems with the minimal necessary functionality for health facilities are provided by the Ministry of Health of Estonia, Lithuania, and some other countries.
- ✓ *Develop public health insurance fund information system covering beneficiary enrollment, claims management, funds management, and quality assurance.* A recently established National Health Insurance Fund, which is in charge of the implementation of the healthcare financing reform, requires a robust insurance management information system with a wide range of functionality. The key requirement for the NHIF system's development: it shall not only address the needs of the fund but be securely integrated with the national digital health platform to use common registries and standards and to avoid duplication of data entering. This is how national insurance funds' information systems interact with national DHPs in countries with a developed centralized national e-health system.
- ✓ *Create a data warehouse and business intelligence platform for capturing, monitoring, and analyzing health system indicators.* To draw meaningful conclusions and find relevant insights from the data collected through all inter-connected digital health systems, a data warehouse with a robust business intelligence toolset is required. The global best practice suggests establishing dedicated warehouses, which aggregate medical, financial, and administrative data available in various national and local digital health systems and utilizing business intelligence (BI) instruments to create user-group-specific dashboards, which graphically visualize the relevant indicators and key performance indicators (KPIs) on national, regional or healthcare facility levels.
- ✓ *Introduce a standardized resource management system for public healthcare facilities.* The processes of human resource management, accounting, purchase, and inventory management are highly similar in public health facilities with varying levels of complexity, which depends on the size of the organization. Thus, a standardized healthcare facility resource management system, also called enterprise resource planning system (ERP), needs to be implemented and rolled out.
- ✓ *Create health professionals' continuous education and engagement platform.* EdTech tools, such as learning management systems, gamification, and remote and hybrid training systems, shall be utilized under the new digital health learning platform. The learning platform shall become a modern and efficient vehicle to deliver medical, professional, clinical safety, or IT knowledge to doctors and nurses in the form of online courses, recorded video lectures, educational games, quizzes, and tests.

## **Enable nationwide exchange of lifelong patient clinical data to facilitate the continuity of care (4)**

To ensure well-informed clinical decisions and facilitate continuity of care, aggregated patient records that provide comprehensive historical and actual health and treatment information are required. Such electronic medical records are predominantly collected within healthcare facilities. However, it is proven that to improve the overall quality of patients' diagnostics and treatment, facility-level patient data shall be consolidated into lifelong patient medical records, which have the capacity to provide a comprehensive and holistic view to clinicians. Such a system is called a national electronic health records system (N/EHR), which is a central part of the national digital health platform.

A national EHR system shall be established, which will take a central part of the digital health ecosystem. The nationwide EHR must rely on the industry-approved standards for health data records format and exchange protocols, which will ensure patients' medical records' cross-institutional availability to health professionals and patients. Moreover, the national EHR needs to be connected to the patient engagement portal and patient consent management system, to empower patients to augment their health records and manage access to them. National EHR has been established in most Western and Southern European countries, as well as, in the neighboring countries, in Kazakhstan. At the moment, similar systems are being created in Mongolia and Belarus.

### **Specific actions:**

- ✓ *Establish a national EHR system for public and private healthcare facilities, with international standard-based health information exchange.* The national EHR, which is based on open industry-approved standards, shall be created in a way to provide consolidated storage and exchange of patients' medical records for public and private, national, and facility-level healthcare IT systems. Patients shall be given technical possibilities through consent management to control their data privacy and monitor access to their data. The legal environment should support the concept that all data related to a patient's health is available from a single source regardless of the ownership of the healthcare institution that collected the data.
- ✓ *Create a digital imaging archive and teleradiology capacity (elming).* Modern digital imaging and diagnostic devices provide possibilities for precise diagnostics and ensure evidence-based treatment. To improve diagnostic quality and ensure health equity, diagnostic imaging shall be stored and accessed across the borders of health facilities, enabling remote consultations of specialized radiologists. The digital image archive should have the capacity to store not only results of radiology exams (x-ray, ultrasound, computed tomography, magnetic resonance imaging, etc.) but also endoscopy (gastroscopy, colonoscopy, bronchoscopy, etc.) images, medical photos (e.g., eye fundus, skin, etc.) and graphs (electrocardiography, electroencephalography, etc.).
- ✓ *Introduce inter-institutional telemedicine services (provider-to-provider) with access to N/EHR data.* Telemedicine services between healthcare providers (doctor-doctor and nurse-doctor) resolve issues of scarce human resources, instrumentalize task shifting, and, overall, allow reduction of health services inequity. To ensure meaningful and effective telemedicine services, connectivity to electronic medical records and diagnostic images shall be provided. The experience of countries already widely using inter-departmental teleconsultation services shows the importance of deeper integration of the telemedicine system with the national e-health system, in particular with EHR, so that the consulting provider has a full range of information about the patient. This approach helps to avoid medical errors, as well as to improve the quality of consultations.
- ✓ *Introduce a clinical decision support platform and Artificial Intelligence (AI)-enabling environment integrated with national EHR.* Internationally approved areas for AI applications are: automated diagnostic image evaluation, patient triage process, automated clinical text analysis, provision of clinical safety alerts, and suggestions on the treatment pathways. Importantly, effective usage of such systems on a national scale is only possible when healthcare facilities are provided with ICT infrastructure and core elements of the national digital health platform are already in place.
- ✓ *Introduce clinical documentation and management functionality in MIS and HIS.* Already rolled-out national medical information system and private EMR and HIS systems shall be augmented with functions to capture clinical data in a structured and standardized way. In addition, electronic entry of medical practitioner instructions for the treatment of patients, nursing documentation, and clinical pathways functions will be required to fulfill patient-centric diagnostic and treatment process and apply clinical decision support tools.

## **Empower and engage patients by providing digital health services (5)**

The introduction of digital health services to patients shall increase satisfaction level, reduce waiting times, and facilitates transparency of service delivery. The most impactful and beneficial health digitalization initiatives are related to the mostly-used health services – prescription and dispensing of medications and referral and booking of an appointment, diagnostic service, or hospitalization, respectively – e-prescription and e-referral. Implementation of these digital interventions shall reduce patients' waiting times, increase efficiency in utilization of healthcare resources, bring transparency and prevent corruption.

The successful implementations of e-referral systems, even in resource-limited health systems, have significantly improved the efficiency of resource utilization (doctors and diagnostic equipment) and patient satisfaction. For example, the e-referral system "Moj Termin" implemented in North Macedonia has reduced waiting time for outpatient consultations and diagnostic tests by 400 percent in three years, which directly contributed to the higher international ranking of North Macedonia's health system. According to the Euro Health Consumer Index (EHCI) report, North Macedonia has made "the most remarkable advance in the EHCI scoring of any country in the history of the Index, from 27th to 16th place, largely due to more or less eliminating waiting lists by implementing their real-time e-referral system!"

The key preconditions for these systems are the availability of reliable and sufficient ICT infrastructure in the health sector and established core components of the digital health platform.

### **Specific actions:**

- ✓ *Develop a national e-prescription system.* The benefits of national e-prescription systems are numerous: streamlining the process of prescribing, avoiding human errors, pharmacological control, automated control of drug-drug and drug-allergy interactions, embedded reimbursement possibilities, automated management of reoccurring prescriptions for chronic diseases, propagating prescription of generic medications. This service should be provided by any pharmacy in the country, not depending on the ownership. National E-prescription systems have been successfully introduced in many countries such as Denmark, Sweden, Austria, Great Britain, Albania, and Ukraine.
- ✓ *Develop a national e-Referral system.* The national e-referral system, covering the full spectrum of referral patterns on all levels of health service delivery, will support the referral pattern and upgrade the existing national patient e-scheduling system, connecting it to the interoperable components of the digital health platform. Thoughtful implementation of e-referral will achieve significant waiting time reductions and increases the trust and satisfaction level of the patients.
- ✓ *Create a patient engagement portal and mobile applications.* Provision of health e-services requires a one-stop-shop portal, which provides possibilities to consume the e-services, access patient medical records, provide health alerts, and access to health education information, e.g. nutrition, healthy lifestyle, and advice for chronic disease management. A national patient portal focused on interaction and patient engagement for a healthy lifestyle with a proactive approach to managing self-health needs to be created.
- ✓ *Establish prevention programs management platform.* To increase the quality of nationwide health programs and improve global health indicators, a national IT platform will be created allowing implementation and monitoring of health screening and life-event related scheduled care programs, in particular: Mother and Child Health Passport, vaccination, and gender/age group related health checkups.
- ✓ *The key component which shall positively address infant and maternal mortality is the digitally-supported Mother and Child Health Passport system.* Reduction of the infant and maternal mortality rate is among the key priorities set in healthcare reform policies. More than 50 countries have successfully utilized the maternal-child health handbook (MCH-HB). MCH-HB is a notebook or mobile app to keep a record of pregnancy/child-related facts, such as the mother's health, the progress of pregnancy and childbirth conditions, and also of the newborn child's condition until the child reaches school age, including the child's health, development and vaccination history. By using digital technologies, a modern MCH-HB may be implemented electronically, enabling data entry and access to information from the smartphone, tablet, or computer. In addition, electronic MCH-HB will provide alerts, notifications, and advice during pregnancy and infant care, as well as facilitate the booking of check-ups and doctor appointments.
- ✓ *Implement provider-to-patient telemedicine services.* One of the more advanced, but essential e-service, especially in the situation of pandemics, is the provision of remote consultations (teleconsultations). To successfully roll out provider-to-patient telemedicine services on a national scale, additionally to the universally accessible nationwide EHR, the underpinning regulatory framework and financial

reimbursement systems shall be put in place. Therefore, before commencing national provider-to-patient telemedicine services, the MOH needs to prepare the legal and financial basis for remote patients care. The experience of many countries has shown that telemedicine services are not gaining wide adoption when the regulatory framework and or reimbursement mechanisms are not in place.

### **Equip health facilities at all levels of care with underlying ICT infrastructure (6)**

The provision of the ICT infrastructure for healthcare organizations is a prerequisite for any digital health intervention, and therefore shall be given the highest priority.

For the successful implementation of the digital interventions described in the above sections, the following tasks must be accomplished within the next 2 to 3 years: setting up a resilient and scalable health data center, deployment of more than 50 thousand computers, finalizing networking of healthcare facilities, provision broadband internet to healthcare facilities. Moreover, adequate maintenance and support services for the ICT infrastructure should be implemented by assigned local organizations, and coordinated on regional and national levels, by securing financing, establishing quality standards, and implementing continuous monitoring and evaluation.

#### **Specific actions:**

- ✓ *Establish a central governmental digital health data center with local hubs at the regional level.* Demand for computational capacity will grow significantly with each national digital health project. Therefore, resilient primary and secondary health data centers should be established in a coordinated effort with MinInfocom.
- ✓ *Provide local area network connectivity within public healthcare organizations and healthcare administrative authorities.* Provision of local area networks up to the workplaces of doctors and nurses should be continued and finalized on all levels of health care institutions.
- ✓ *Provide all public healthcare organizations with workstations and peripherals.* Personal workstations (computers, laptops, tablets) should be procured in phases that are coherent with the planned digital interventions.
- ✓ *Provide means for electronic patient identification, authentication, and electronic signing.* An advanced phase of digitalization will require Public Key Infrastructure and the utilization of qualified digital certificates. Subject to the availability of underlying e-gov technology, it may entail the provision of national health smartcards or the acquisition of existing USB keys, smartcards, and smartcard readers.
- ✓ *Assign responsible organization for oversight and management of Information and Communication Technologies (ICT) infrastructure in public healthcare facilities and health administration.* The usability and lifecycle of most ICT equipment are limited to 3-5 years. To ensure sustainability, maintenance, and replacement of the ICT equipment, strategic planning and operational management of the ICT inventory are required.
- ✓ *Secure financing mechanism for ICT equipment acquisition, replacement, and maintenance.* To secure allocation of the necessary funds for maintenance and routine replacement of IT equipment, a legal decree (ministerial order) shall be put forth, which guarantees financial commitment in the form of a dedicated budget line in the annual budget per health organization.

## PAPER 6: Pharmaceuticals and Medical Devices

### Introduction

Pharmaceuticals, medical devices and other health technologies are an integral part of a health care system. They contribute to better health outcomes and consume a large part of the recurrent national health budget, second only to staff salaries. Since independence in 1991, Uzbekistan has been transitioning from a planned to a market economy. The health system, along with the pharmaceutical and medical device sector, has also evolved as part of the State reform agenda which picked up pace in 2016 with the economic modernization program.<sup>96</sup> In Soviet times, health care was free for all—including the free provision of medicines—and there was no private sector. From no private pharmaceutical company in 1991, Uzbekistan now has 221 manufacturers, which meet approximately 45 percent<sup>97</sup> of the local needs for pharmaceuticals by volume, and exports are steadily growing. All state-owned pharmacies were privatized, and scores of new pharmacies have opened; currently, there are ~14,000 private pharmacies in Uzbekistan.<sup>98</sup> A Presidential decree in 2017 expanded the number of services in the private health sector from 50 to 126.<sup>99</sup> There are now an estimated 7320 private clinics.<sup>100</sup> All this has meant an increased private supply of pharmaceuticals and other health technologies. These are remarkable changes in three decades. The pharmaceutical and medical device industry is a priority sector for the government for serving the domestic health care needs as well as a factor of economy and industrial development.

This report is a result of a literature review, interviews with policymakers in Uzbekistan, field visits, and various group discussions. There is a general lack of information in the sector, and access to reliable information is a challenge. Triangulation of all the above approaches has helped in the understanding of the situation. At an early stage of this work, a set of high-level objectives<sup>101</sup> were formulated, shared, and agreed to at a senior policy level and in a working group of various stakeholders. A framework for the analysis was also adopted to guide the research. It consisted of a “national medicine policy – a tree that bears fruit” and “structure of a complete national medicine policy,” both taken from the Managing Drug Supply from Management Sciences for Health.<sup>102</sup>

### Situation analysis

**The current situation** of the pharmaceutical and medical device sector in Uzbekistan is characterized by the public sector being a major buyer for public sector health facilities. The government is paying special attention to providing free medicines for patients suffering from cancer, endocrinological and mental conditions, tuberculosis, leprosy, HIV/AIDS, and post-operative states related to cardiac interventions and transplantations. Yet patients also have to pay out-of-pocket even when they visit public sector facilities.

The public procurement and supply system has major inefficiencies, and there are valid concerns about the quality of medicines available at public health facilities. In 2021, twenty percent of public procurement takes place centrally through O'zmedimpeks, a public procurement agency under the Ministry of Health (MoH), and the remaining 80 percent of public medicines are procured directly by the public sector hospitals and primary care facilities monthly through an online bidding process. In this process, 698

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<sup>96</sup> “Izvorski, Ivailo; Vatyán, Arman; Trushin, Eskender; Abdul-Hamid, Husein; Dalvit, Nicolo; Safarov, Maksudjon; Iootty, Mariana; Novikova, Marina; Melecky, Martin; Ahmedov, Mohirjon; Manuilova, Natalia; Zorya, Sergiy; Nagaraj, Vinayak. 2021. Assessing Uzbekistan’s Transition: Country Economic Memorandum. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/36655> License: CC BY 3.0 IGO.”

<sup>97</sup> Data from Ministry of Investment and Foreign Trade, 2022

<sup>98</sup> Information obtained during interviews with officials at Ministry of Health and Ministry of Investment and Foreign Trade

<sup>99</sup> Decree of the President of the Republic of Uzbekistan No. PP-2863 of 1 April 2017 "On measures for the further development of the private health sector"

<sup>100</sup> MoH Department for Licensing, Accreditation and Medical Tourism

<sup>101</sup> For high-level objectives see section 3 of this report

<sup>102</sup> Management Sciences for Health. 2012. *MDS-3. Managing Access to Medicines and Health Technologies*. Arlington, VA: Management Sciences for Health.

licensed distributors with widely varying capacity of supply can submit bids, and health facilities select the lowest prices. This public procurement system is fraught with numerous problems.

The government explicitly encourages import substitution, and a comprehensive preferential policy package to support local manufacturing of pharmaceuticals and medical devices is resulting in an increasing number of foreign direct investments, joint ventures, and diversification of product range. Share of locally manufactured products—both in terms of volume and value—is increasing. The government has set up an Agency for Pharmaceutical Manufacturing Development and is making a large investment in the Tashkent Pharma Park, over 134 hectares of government land which will likely become operational in late 2022. Adherence to good manufacturing practices (GMP) in local production is a major priority; starting 1 April 2022, all new manufacturers must comply with GMP guidelines, and all existing manufacturers must be certified for GMP compliance by 31 December 2023.

Steady growth of the private health sector has also brought myriad challenges. A large number of private distributors (698), private pharmacies (~14,000), a growing number of private hospitals and clinics (7,320) all supply and consume medicines and medical devices. Regulatory control of this ever-growing private sector is a huge challenge.

The State Centre for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment is the regulatory department, which is currently a part of the Agency for Pharmaceutical Manufacturing Development. Both organizations are part of the MoH. Regulation of medicines and medical devices is not free of conflicts of interest and is not independent.

To effectively harness the true potential of the largest pharmaceutical market in Central Asia, active redress of the prevailing challenges and a strategically directed development of the pharmaceutical and medical device sector in Uzbekistan would produce long-term dividends. It will better serve the domestic health care system, enhance industrial growth, increase exports, and bolster relative self-sufficiency and development of the knowledge economy.

The below sections briefly explain **five key challenges** that if not addressed on a priority basis would hold back the pharmaceutical and medical devices sector development:

### **Restrictive access to medicines<sup>103</sup> for low-income and other vulnerable groups**

After independence, free health services were replaced by a state-funded health benefits package through a Law on Health Protection in 1996 covering primary care, emergency care, ambulance services, pediatric services, seven disease groups, and six population groups.<sup>104,105</sup> These free services, however, only make up a small proportion of the total care provided to these patients. All medical services outside the package are financed through out-of-pocket expenditures including medicines and diagnostic tests, regardless of income group. Currently, out-of-pocket expenditures are 58 percent of total health expenditure (THE).<sup>106</sup> User fees can be a major access barrier to health care and medicines. Studies show that more than 50 percent of the health needs of the poor remain unmet in Uzbekistan.<sup>107</sup> Low-income and other vulnerable groups (e.g., people with disabilities) are not financially protected against the high cost of health care, including medicines and diagnostic tests in Uzbekistan. Due to epidemiological transition, most people suffer and die due to non-communicable diseases, which require integrated and

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<sup>103</sup> Read “medicines” as “medicines and medical devices” in this document

<sup>104</sup> Such as single pensioners registered at the social services, participants of the “labour front” in 1941–1945, and people with disabilities incurred when dealing with the consequences of the Chernobyl nuclear power plant accident.

<sup>105</sup> Mohir Ahmedov et al, Health Systems in Transition, Vol. 16 No. 5 2014, Uzbekistan: Health System in Review 2014, European Observatory on Health Systems and Policies (Partnership hosted by WHO)

<sup>106</sup> Information obtained from an unpublished document from the World Bank

<sup>107</sup> Calculated based on data from Listening to the Citizens of Uzbekistan Survey 2018

long-term care. Informal payments to doctors are also a common occurrence, which further adds to the financial burden on low-income groups.

### **75 percent of medicines, by value, are imported**

Uzbekistan is a doubly landlocked country, which makes imports difficult and expensive. Domestic pharmaceutical industrial development is a priority for the government, and it has taken a number of measures to encourage local manufacturing. The government established an Agency for the Development of Pharmaceutical Industry in 2018, created tax-free zones for new plant construction, and is undertaking a major initiative in the form of establishing Tashkent Pharma Park over 134 hectares of land. The latest Presidential decree (No UP-55) was issued in January 2022 on Additional Measures to Accelerate the Development of the Pharmaceutical Industry of the Republic of Uzbekistan in 2022-2026. As a result of such measures, the value and volume of local production and exports are gradually increasing. The current volume share of locally produced medical products is approximately 45 percent, and the official target is to increase to 80 percent by 2026. Nevertheless, of the total pharmaceutical market of \$2 billion, 75 percent consists of imports (Figure 1).<sup>108</sup> An important challenge is the negative public perception about the quality of locally produced medicines. In the context of COVID-19, new opportunities have emerged for diversifying the manufacturing base for mRNA vaccine production globally and other health technologies. As the largest market in central Asia and with a top-leadership commitment to develop and expand the local pharmaceutical industry, Uzbekistan has a huge strategic opportunity to seize. There is a need to develop a strategic approach toward enhancing local manufacturing of medicines and medical products.

**Figure 1. Value and volume of local production and value of imports and exports**



Source: Interviews with officials at Ministry of Health and Ministry of Investment and Foreign Trade

### **Regulation of medicines is not independent and suffers from confluence of competing interest**

In 1995, the MoH established the Department for Quality Assurance of Drugs and Medical Equipment. This evolved into the State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment (the State Center) which, in 2018, became a structural unit of the newly established Agency for the Development of the Pharmaceutical Industry (the Agency) of the MoH. The State center staff numbers approximately 400 people, more than the staff of MoH, and is responsible for regulatory functions including market authorization (registration); licensing of manufacturers, wholesalers and retail pharmacies; quality control through GMP and inspections; control of pharmaceutical imports; clinical trials; post-marketing surveillance (pharmacovigilance), etc. However, regulation is inefficient and weak in many areas. Reports about availability of unregistered medicines and medical devices are common, for example, in the areas of dentistry and cosmetic surgery. Regulation is explicitly being leveraged for industrial development. Pharmaceutical industrial development and regulation of the industry are led by

<sup>108</sup> Information obtained during interviews with officials at Ministry of Health and Ministry of Investment and Foreign Trade

the same agency, which is against global good practice, and undermines the regulatory function. A global good practice is also to (re)establish regulatory organizations as independent institutions.

Almost all countries have a medical product regulation function as part of the MoH, semi-autonomous or completely independent (e.g. US FDA is semi-autonomous part of Health and Human Services, European Medicines Agency is independent, Health Canada is semi-autonomous part of the Health Portfolio, ANVISA in Brazil is a semi-autonomous part of the MoH, Japan's Ministry of Health, Labor and Welfare (MHLW) oversees food and drugs and the Pharmaceutical and Medical Device Agency (PMDA) reviews applications). But very few countries have a pharmaceutical industry development function explicitly mandated to a public sector organization, let alone as part of the regulatory function. A helpful representative example is South Korea, where what had been a regulatory function embedded within the country's ministry of health was made independent in 1996, then was raised to the status of administration (Korea Food and Drug Administration), in 1998. In 2004, the organization was restructured with the creation of Medical Devices Management Division and Bioproduct Technical Support Division, and in 2013, the organization was again restructured and upgraded to a ministry and its name changed to the Ministry of Food and Drug Safety. Today it is not only separate, but it has the unusual status of a separate ministry. The South Korean government features a separate and independent agency called Korea Health Industry Development Institute focused on developing the local health industry, which is linked with the MoH but is independent in its functions. Another example is that of the Ethiopian Food & Drug Authority, which is part of the Ministry of Health, along with 12 other agencies, but operates independently. In India, the Department of Pharmaceuticals was established in 2008 and is part of the Ministry of Chemicals and Fertilizers.<sup>109</sup> In many G20 countries there are no comparable agencies focused on developing the pharmaceutical sector. Countries instead invest more indirectly in basic scientific research (e.g., NIH in the US), university-industry partnerships (e.g., Researcher Exchange and Development within Industry (REDI) initiative in Australia) or local initiatives focused on healthcare startups (e.g. Base Launch initiative by BaselArea.swiss).

Another challenge is that there is no complete self or external evaluation of the regulatory system using the Global Benchmarking Tool (GBT).<sup>110</sup> The GBT identifies strengths and areas for improvement, facilitates the formulation of interventions into an institutional development plan, prioritizes those interventions, and monitors' progress. A formal WHO assessment of the State Center was tentatively planned for late 2020 but was postponed due to the COVID-19 pandemic.

### **Selection, procurement, and supply of medicines (i.e., supply chain management), need major improvements**

Uzbekistan has an Essential Medicines List approved in 2021 by the Minister of Health<sup>111</sup>; but it is not clear how this list was developed nor how it is used in public procurement. The Government procurement takes place centrally as well as at the health facility level. Of the total public sector procurement of medicines in 2021, ~20 percent procurement took place at the central level, including procurement for designated conditions such as diabetes, and ~80 percent procurement was undertaken directly by the government hospitals at primary, secondary, and tertiary level health facilities, including large hospitals. Beginning in 2022, a new scheme was introduced to centralize purchase and procurement of some 32 medicines through the MoH and O'zmedimpeks, however, given the lengthy centralized tendering and procurement processes, as of September 2022, health facilities still have not received medications. At the central level, the Department of Formation of the Need for Medicines and Medical Products in Government Medical Institutions consolidate the "national needs," the Ministry of Finance allocates funds in accordance with

<sup>109</sup> <https://pharmaceuticals.gov.in/about-department>

<sup>110</sup> [https://www.who.int/medicines/regulation/benchmarking\\_tool/en/](https://www.who.int/medicines/regulation/benchmarking_tool/en/)

<sup>111</sup> The Order of the Minister of Health of Republic of Uzbekistan on the Approval of the Essential Medicines List No 41 dated July 20, 2018 (Registration number 3045 dated July 27,

this need but often drastically slash the required budget. O'zmedimpeks, a national procurement agency subordinate to the MoH, manages the procurement through competitive bidding. After orders are placed, it is the responsibility of the companies and distributors to directly supply the medicines at the facility level. Direct procurement by the health facilities uses allocated government funds at the primary, secondary, and tertiary facility level, although in large hospitals, most patients typically pay out of pocket for medicines from private pharmacies. The health facilities procure medicines through digital platforms, where 698 licensed distributors can bid for the orders. The lowest price offer is accepted, regardless of the supplier's adherence to the Good Distribution and Storage practices (GDP). A common perception is that the quality of medicines at public sector facilities is low.

### **Unethical and irrational prescribing, sale, and use of medicines**

WHO estimates that more than half of all medicines are prescribed, dispensed, or sold inappropriately, and that half of all patients fail to take them correctly.<sup>112</sup> The overuse, underuse, or misuse of medicines results in wastage of scarce resources and widespread health hazards. Growing antimicrobial resistance is a direct result of irresponsible and indiscriminate use of antibiotics in humans and animals. No data could be obtained on prescribing and use of medicines in Uzbekistan. However, there is significant anecdotal evidence that unethical promotional practices by the pharmaceutical industry are quite prevalent and impact upon the prescribing behaviors. Despite regulations, members of the public can buy any medicine, including antibiotics from private pharmacies in the country. In addition, a recent policy allows doctors to dispense pharmaceuticals; this acts as a perverse incentive for irrational prescribing.

### **Recommendations and actions**

**A vision of the future.** The government of Uzbekistan aims to improve population health through enhanced access to safe, reliable, effective, appropriate and affordable care for the entire population.<sup>113</sup> Through the National Health System Strategy, the MoH will act to improve equitable access to safe, effective, and quality assured affordable essential medicines and medical devices in public and private health sectors. The outcome will be a stronger and well-regulated pharmaceutical and medical device sector that meets the national health needs of quality medical products increasingly through local manufacturing and that contributes to national industrial and economic development.

### **TO REALIZE THIS VISION, THE MOH MUST REFORM THE PHARMACEUTICAL AND MEDICAL DEVICE SECTOR BY STRENGTHENING ITS STEWARDSHIP ROLE**

To lead an effective and sustainable reform agenda in the pharmaceutical and medical device sector, the MoH must redefine and strengthen its own role as a policy maker and steer relevant institutional development and reorganization. To achieve improved access to and quality of affordable medicines and medical devices as part of health services to advance universal health coverage in the country, the following high-level objectives must be pursued:

- Ensure equitable access to safe, effective, and quality assured affordable essential medicines and medical devices
- Develop and strengthen fit-for-purpose regulatory and other institutions and human resources for pharmaceuticals and medical devices
- Advance self-reliance by building a national pharmaceutical and medical device industry to produce quality-assured medicines

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<sup>112</sup> [Promoting rational use of medicines \(who.int\)](#)

<sup>113</sup> Decree of the President of the Republic of Uzbekistan No. UP-5590 of December 7, 2018 "About complex measures for radical enhancement of health care system of the Republic of Uzbekistan"

- Promote ethical and rational use of medicines and medical devices by health care providers and consumers

**The following eleven (11) recommendations relate directly to the underpinning objectives outlined above.**

**Establish a Pharmaceutical and Medical Device Policy Unit in the Ministry of Health (1)**

The MoH has a critical role in setting national health policy and goals. It directs, guides, and ensures internal policy coherence across the public sector in general and among all health-related public sector organizations in particular. It also ensures adherence to government health policies by the private health sector through regulation and collaboration. This is also squarely applicable in the pharmaceutical and medical device sector. As a policy leader in the pharmaceutical sector, it shapes the sector, sets norms and regulations, and ensures that people are served with needed quality assured medicines at a price that they can afford. Policy making function of MoH in this area cannot be emphasized enough. However, the current MoH institutional capacity in this area is limited. Direct regulation of the sector is the responsibility of the State Centre for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment, which is attached to the Agency for the Pharmaceutical Manufacturing Development. Another pharmaceutical related section in the MoH is Department of Regulation of Circulation (Supply) of Medicines, Medical Devices and Medical Equipment and Coordination of Humanitarian Donations. This department has a staff of only five professionals. This department is responsible for consolidating the medicine needs for the public sector hospitals, forwarding requests to O'zmedimpeks, and coordinating drug donations from international agencies and companies. The establishment of a new Pharmaceutical and Medical Device Unit is recommended with defined policy-related functions that ensure that all stakeholders within and outside the public sector comply with MoH policies. One major function of this Unit would be to implement the Pharmaceutical Sector Strategy as a part of the Health Sector Strategy and report on the developments, trends, performance, and progress in the sector annually and publicly.

**Specific Actions:**

- ✓ Develop functions, an organizational structure, and human resource needs for the Pharmaceutical and Medical Device Policy Unit as part of the restructuring of the MoH.
- ✓ Establish Pharmaceutical and Medical Device Policy Unit in MoH in accordance with revised functions, organizational structure, and staff.

**Publish an annual report on the state of the pharmaceutical and medical device sector (2)**

MoH must adopt a renewed role as a policy steward in the pharmaceutical and medical device sector. In order to keep policy coherence and adherence across the relevant organizations, it would be strategic for MoH to develop and launch annual reports on the state of the pharmaceutical and medical device sector in the country. In addition to establishing the MoH as a policy leader in this area, the annual report will serve as a reference point for the latest information on the sector, which would otherwise remain scattered across organizations. Through these documents, MoH would report developments, trends, performance, and progress in the sector in line with the health policy and Pharmaceutical Sector Strategy. Authentic information produced this way would be useful for all stakeholders in the country, for making any policy adjustments as well as to external parties including possible investors. Key areas in the annual report include, but are not limited to, legislative and regulatory framework; financing; local manufacturing; access to and supply of medicines; affordability; rational use; human resources; monitoring; evaluation and research. Production of these annual reports will be a key responsibility of the newly established Pharmaceutical and Medical Device Unit in the MoH. Many countries and their related

departments and organizations produce such annual reports e.g., India,<sup>114</sup> Australia,<sup>115</sup> South Africa,<sup>116</sup> UK,<sup>117</sup> USA.<sup>118</sup>

**Specific Actions:**

- ✓ First report to be produced in December 2023.
- ✓ Seven subsequent annual reports to be produced every December until 2030.

**Review the current medicine pricing regulation policy (3)**

There is a general perception that prices of medicines in Uzbekistan are higher than in other countries, but no data are available to support this claim. Also, no information is available about the affordability of medicines, especially for lower socio-economic classes and other vulnerable groups. However, high out-of-pocket expenditure on health care including medicines indicates that these populations may face financial difficulties in affording medications. In the case of imported medicines, current pricing policy is based upon reference pricing whereby an average price of the same medicine is calculated in 10 reference countries, then 15 percent margin to wholesaler and 20 percent margin to the retailer is added. For locally produced medicines, the manufacturer's "declared price" —presumably based on market competition— is accepted. These policies must be reviewed from the perspective of striking a better balance between what people can afford and what is a good profit margin for the importers and manufacturers.

**Specific Actions:**

- ✓ External review of the current medicine pricing regulation policy.

**Develop an ongoing system to measure medicine prices, availability, affordability, and price components (4)**

Despite 58 percent out-of-pocket expenditure by the people and around 30 percent being spent on medicines, scant data on affordability are available in the country. Seventy-five percent of medicines are imported into Uzbekistan by value, and there is a general perception that medicines are expensive. In 2018, it was estimated that 35 percent of the lowest socioeconomic quintile of Uzbek citizens could not afford medicines.<sup>119</sup> There is a need for MoH to keep a vigilant watch on prices as it has a direct bearing on financial access to health care for vulnerable and low-income patients. Health Action International (HAI),<sup>120</sup> an international NGO along with WHO has developed a methodology to survey medicine prices, availability, affordability, and price components. More than 100 surveys have been done in more than 60 countries including Kazakhstan and Kyrgyzstan in Central Asia. Some national experiences are available in international literature about what can be learned from medicine pricing surveys and how they have helped (e.g., Malaysia<sup>121</sup> and Pakistan<sup>122</sup>). WHO/Elsevier have published a book entitled *Medicine Price Surveys, Analyses and Comparisons* by Sabine Vogler.<sup>123</sup> HAI and WHO provide tools, training and technical support to countries for undertaking these surveys and support policy analysis for the development of pricing policies that improve access to affordable medicines.<sup>124</sup> It is recommended that medicine pricing surveys be initiated in Uzbekistan with the support of HAI and WHO; the surveys may then be institutionalized by developing local expertise. The proposed Pharmaceutical and Medicine Device Unit in

<sup>114</sup> <https://pharmaceuticals.gov.in/annual-report>

<sup>115</sup> [Annual reports | Therapeutic Goods Administration \(TGA\)](#)

<sup>116</sup> [SAHPRA-202021-Annual-Report.pdf](#)

<sup>117</sup> [United Kingdom drug situation: Focal Point annual report - GOV.UK \(www.gov.uk\)](#)

<sup>118</sup> [2021 Annual Report \(fda.gov\)](#)

<sup>119</sup> World Bank staff calculations based on the Listening to the Citizens of Uzbekistan survey, 2018

<sup>120</sup> <https://haiweb.org/>

<sup>121</sup> [Conducting-a-Medicine-Pricing-Survey-Experience-and-Challenges.pdf \(haiweb.org\)](#)

<sup>122</sup> [Evaluation of prices, availability and affordability of essential medicines in Lahore Division, Pakistan: A cross-sectional survey using WHO/HAI methodology | PLOS ONE](#)

<sup>123</sup> [Medicine Price Surveys, Analyses and Comparisons | ScienceDirect](#)

<sup>124</sup> [Prices, Availability & Affordability - Health Action International \(haiweb.org\)](#)

MoH should be responsible for these surveys and ultimately for establishing an ongoing price monitoring mechanism.

**Specific Actions:**

- ✓ Selection of a core team and its training with the support of Health Action International (HAI) to conduct the first pricing survey.
- ✓ Conduct two more 6-monthly surveys under the technical supervision of HAI and WHO.
- ✓ Develop a national medicine price monitoring system including regular (6-monthly) surveys done locally.

**Develop a National Pharmaceutical Manufacturing Development Strategy – 2030 (5)**

Uzbekistan is a doubly landlocked country, which makes imports difficult and expensive. Despite these challenges, in 2021, 75 percent of the \$2 billion total pharmaceutical market consisted of imports. The Uzbek government has been pursuing an import substitution policy and providing various incentives to investors and local manufacturers.<sup>125</sup> These efforts have shown results in terms of a growing volume of locally manufactured products (~45 percent) but have struggled to show the same gains in terms of value (~25 percent). Promoting and supporting local production must be more strategic and inclusive of health policy and industrial policy. The vision should include meeting current and future domestic health needs and also finding niche areas to diversify manufacturing to result in higher value and more complex pharmaceutical products. This, in turn, will create a knowledge economy and enhance exports, for example, biotechnology (mRNA vaccines, monoclonal antibodies, blood products, etc.) and traditional medicine. In order to pursue this vision, there is a need to develop a well-thought-out pharmaceutical manufacturing development strategy by developing shared national goals between the health, industrial, economic, academic, and legal (intellectual property protection) sectors. WHO provides technical assistance for strategically developing local manufacturing in low- and middle-income countries<sup>126,127</sup> and now convenes a World Local Production forum.<sup>128</sup> With the support of WHO, Ethiopia has developed a National Strategy for Pharmaceutical Manufacturing Development,<sup>129</sup> which has attracted investments and promoted intersectoral collaboration within the public sector on the local production agenda.

**Specific Actions:**

- ✓ Relocate the Agency for Pharmaceutical Manufacturing Development (The Agency) outside the MoH.
- ✓ Establish a national steering committee to develop National Pharmaceutical Manufacturing Development Strategy involving WHO, PQM+/USP, and UNIDO for technical assistance to finalize the strategy.
- ✓ Issue a government resolution / Presidential decree

**All local pharmaceutical manufacturing companies in Uzbekistan should fully comply with National GMP Guidelines by 31 December 2023, and the government should take measures to build people's confidence in locally produced medicines (6)**

Despite emphasis and encouragement by the government to increase local production, the public continues to perceive the quality of locally produced medicines negatively. Those who can afford them tend to purchase imported medicines. There is a need to build both public and medical practitioners' confidence in the quality of locally manufactured medicines. The government had set a deadline for all manufacturers to comply with the national Good Manufacturing Practice guidelines (GMP) fully by January 2022. The deadline was revised, and a new target date (1 January 2024) was set through a

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<sup>125</sup> The latest Presidential decree (No UP-55) was issued in January, 2022 on *Additional Measures to Accelerate the Development of the Pharmaceutical Industry of the Republic of Uzbekistan in 2022-2026*.

<sup>126</sup> [Regulation and Prequalification \(who.int\)](#)

<sup>127</sup> [9789241510141\\_eng.pdf](#)

<sup>128</sup> [World Local Production Forum: Enhancing access to medicines and other health technologies \(who.int\)](#)

<sup>129</sup> [ethiopian\\_national\\_strategy.pdf \(who.int\)](#)

Presidential decree.<sup>130</sup> These GMP guidelines are part of a roadmap to become a member of PIC/S, which will enable Uzbekistan to participate in the conduct and sharing of information amongst regulatory inspectorates with harmonized inspection procedures and common standards, and facilitate the export of locally produced products. The current GMP standards are being harmonized to PIC/S standards.<sup>131</sup> According to the same decree, from 1 April 2022, no new pharmaceutical company, distributor, or retail seller will be allowed to operate if they do not fully comply with the GMP, GDP, and Good Pharmacy Practice (GPP). These are excellent measures. It is important that the deadline not be extended beyond 1 January 2024 for full compliance of all manufacturers to the national GMP guidelines. Equally important is that government build confidence among the general public and medical practitioners about the quality of locally produced medicines. Since local pharmaceutical manufacturers and regulators currently use Contract Research Organizations (CROs) for any bioequivalence studies it is recommended that the government develop and implement national bioequivalence guidelines for the scientific confirmation of products that have undergone therapeutic equivalence evaluation, publish bioequivalent generic products in a national register similar to the US FDA Orange Book and develop guidelines to encourage substitution and interchangeability of bioequivalent generics in prescription and dispensing practices.

#### **Specific Actions:**

- ✓ All manufacturers, except those few who have already obtained GMP certification, submit their company plans to comply with national GMP Guidelines.
- ✓ Standardization and Quality Department of Regulatory Authority provide formal trainings and technical support to pharmaceutical companies for compliance with national GMP guidelines.
- ✓ Government publicly announces the state of GMP compliance by the local manufacturers after the deadline of 1 January 2024.
- ✓ Government publicly announces the closing of any non-GMP compliant local manufacturers after the deadline of 1 January 2024.
- ✓ Government runs a sustained public awareness media campaign to promote the high quality of locally produced medicines by the GMP-compliant local manufacturers and maintains a publicly available list of GMP-compliant manufacturers.
- ✓ Government to create domestic bioequivalence capabilities to support manufacturers in production of generic medicines locally.

#### **Establish an independent (legal entity) and competent Medicines Regulatory Authority of Uzbekistan which is free of competing interests, and which has an autonomous governance structure that includes the Ministry of Health (8)**

In 1995, the MoH established the Department for Quality Assurance of Drugs and Medical Equipment. This evolved into the State Centre for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment. In 2018, the State Centre became a structural unit of the newly established Agency for the Development of the Pharmaceutical Industry of the MoH. The State Centre has a staff of around 400, and regulatory functions including market authorization (registration); licensing of manufacturers, wholesalers and retail pharmacies; quality control through GMP and inspections; control of pharmaceutical imports; clinical trials; post-marketing surveillance (pharmacovigilance), etc. However, the pharmaceutical industrial development and regulation of the industry are led by the same agency, which is problematic due to inherent competing interests that undermine the regulatory function. There is a need to (re)establish an efficient, accountable, transparent, and autonomous Medicines Regulatory Authority of Uzbekistan (MRAU) outside the MoH, which is free of competing interests and has a governance structure that involves the MoH. This recommendation is in line with global good practice. Almost all high-income countries and increasingly middle- and low-income countries are establishing

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<sup>130</sup> The latest Presidential decree (No UP-55) was issued in January, 2022 on Additional Measures to Accelerate the Development of the Pharmaceutical Industry of the Republic of Uzbekistan in 2022-2026.

<sup>131</sup> Holy, Jiri, PQM+ Field report, August 2022

independent medicines' regulatory authorities. The establishment of an independent regulatory authority is a long and phased process. However, once established, an autonomous regulatory authority can work efficiently and undertake effective regulations. Working transparently, accountably, and free of competing interests, an independent regulatory authority can bring credibility and confidence within the country as well as in export markets. Many stringent regulatory authorities in the world are now autonomous or semi-autonomous, and some are still part of the ministries of health.<sup>132</sup> Nevertheless, the Ministries of Health play an important role in setting overall regulatory policies aligned with the health policy, and they are part of the governance structure of the autonomous medicine regulatory authorities.

After establishing the MRAU, the organization should conduct a self-evaluation of the WHO GBT to assess the entire regulatory system. An output of this exercise will be a draft Institutional Development Plan (IDP), which the MRAU should begin working on immediately. This is in preparation for a formal GBT evaluation by WHO before 2026, when WHO will revise the existing draft IDP. The MRAU should target the achievement of Maturity Level 3 according to the WHO GBT by 2027 by addressing issues raised in the IDP.

#### **Specific Actions:**

- ✓ Separate Agency for Pharmaceutical Manufacturing Development from State Centre for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment.
- ✓ Establish an independent (legal entity) Medicines Regulatory Authority of Uzbekistan by transforming State Centre for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment.
- ✓ Evaluate the regulatory system according to the WHO GBT and address the institutional development plan that is produced.

#### **Development, implementation and regular review of National Essential Medicines List (9)**

Essential medicines are those that satisfy the priority health care needs of the population. They are intended to be available within the context of functional health systems at all times, in adequate amounts, in the appropriate dosage forms, of assured quality, and at prices that individuals and the community can afford.<sup>133</sup> The WHO Model Lists of Essential Medicines serve as a guide for the development and updating of national and institutional essential medicine lists (EML). The WHO list has been reviewed every 2 years since 1979 and is currently in its 22nd version. Countries use the list to support the procurement and supply of medicines in the public sector, medicines reimbursement schemes, medicine donations, and local medicine production. According to WHO, more than 155 countries develop and maintain a national EML.<sup>134</sup> Uzbekistan has an Essential Medicines List approved in 2021 by the Minister of Health,<sup>135</sup> but it is not clear how this list was developed and how it is used in public procurement. In addition, specific lists of medicines for oncology, orphan diseases, etc. are used for public procurement.<sup>136</sup> WHO provides detailed guidelines for the selection of essential medicines.<sup>137</sup> There is a need to set up a National Committee for the Selection and Use of Essential Medicines, free of competing interests, consisting of the best experts in the country who should regularly update the national list.

#### **Specific Actions:**

- ✓ Establish a National Committee for the Selection and Use of Essential Medicines with clear terms of reference and by transparent declaration and management of competing interests.

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<sup>132</sup> [List of Stringent Regulatory Authorities \(who.int\)](#)

<sup>133</sup> <https://www.who.int/groups/expert-committee-on-selection-and-use-of-essential-medicines>

<sup>134</sup> "The WHO Essential Medicines List (EML): 30th anniversary". World Health Organization. Archived from the original on 27 May 2014. Retrieved 26 June 2016.

<sup>135</sup> Order of the Ministry of Health of the Republic of Uzbekistan under #3289 from 23 March 2021 about the approval of the list of essential medicines

<sup>136</sup> The President of the country has established these special programs to provide free cancer medicines (and for some other selected diseases) with special budget provision.

<sup>137</sup> The Selection and Use of Essential Medicines (2021) - TRS 1035. [The Selection and Use of Essential Medicines \(2021\) - TRS 1035 \(who.int\)](#)

- ✓ Review and publication of the National Essential Medicines List (NEML) in accordance with WHO guidelines.
- ✓ Bi-annual review of National Essential Medicines List.

### **Re-establish an efficient and reliable medicine and medical device supply management system in the public sector (9)**

The current system of a large share of public sector procurement taking place directly at the government health facilities on a monthly basis through a bidding process and using the lowest price offered as the only criteria, is fraught with problems. This system must be reformed; there are at least three options to choose from:

- Consolidate national public sector medicine procurement at the central level by O'zmedimpeks or another central procurement agency. Tenders are floated by creating economies of scale and the best prices from the pre-qualified distributors. Distributors at the health facility level then deliver medicines directly in full compliance with GDP.
- All 14 regions consolidate public sector medicine needs in the region. Regional tenders are floated by creating economies of scale (less than national), and pre-qualified distributors obtain the best prices. Distributors then deliver medicines directly to the health facilities in the region in full compliance with GDP.<sup>138</sup>
- Consolidate national public sector medicine at the central level by O'zmedimpeks or another central government agency and negotiate the best prices from the pre-qualified distributors. Prices are shared with the health facility managers who directly purchase the medicines at the nationally agreed process from the same distributors who deliver the medicines at the health facility level in full compliance with GDP.

#### **Specific Actions:**

- ✓ Assess public procurement and supply system of medical products including O'zmedimpeks and any other medicines procurement agencies.
- ✓ Perform phased review of all licensed distributors (698) of medical products in terms of compliance to good distribution and good storage practices and make appropriate regulatory decisions to ensure full compliance.
- ✓ Re-structure and strengthen O'zmedimpeks or another central procurement agency in light of the assessment report.
- ✓ Develop a system of forecasting, consolidating national needs / regional needs / or negotiating prices nationally for medical products, prequalifying suppliers, tendering and supply and training of staff.
- ✓ Centralize nationally or regionally the tendering / negotiated prices of supply of medical product supply for public health facilities.

### **Effectively controlling the sale of medical products through private pharmacies (10)**

Uzbekistan has moved from having no private pharmacies in Soviet times to now more than 14,000 privately owned pharmacies. Although all of these pharmacies are licensed and obliged to follow Good Distribution, Storage and Pharmacy Practices (GDP), which are licensing conditions, most pharmacies do not comply with these good practices. The GDP practices are being updated along a similar timeline to the GMP guidelines and in an effort to align to global standards. The government maintains an over-the-counter (OTC) list of medicines, which means all other medicines can be obtained only by prescription. In reality, people can buy any medicine over –the counter from these pharmacies. Beyond regulation, it is an enforcement issue. It is recommended that a national list of prescription-only medicines be developed instead of an OTC list, and all other medicines should be made available over the counter. Licensing of

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<sup>138</sup> "In decentralized procurement systems, central procurement agencies find it difficult to monitor local government procurement activities. Resulting problems can include high prices, poor service and product quality, irrational supplier and product selection, and poor payment practices, all of which undermine patient services." From Management Sciences for Health. 2012. MDS-3. Managing Access to Medicines and Health Technologies. Arlington, VA: Management Sciences for Health. (21.18 Chapter on Managing the Tender Process)

new private pharmacies should be made stringent through a thorough assessment of compliance to Good Distribution, Storage and Pharmacy Practices, and all existing private pharmacies should be reassessed for their adherence to good practices in a phased manner until 2027. Experience from low- and middle-income countries in effectively regulating private pharmacies however is inadequate.<sup>139</sup>

**Specific Actions:**

- ✓ Review and develop a list of prescription-only medicines, according to Decree № 3315 from 30/07/2021: List of over-the-counter medicines.
- ✓ Phased review of all licensed private pharmacies (~14,000) for their adherence to good pharmacy practices and compliance to regulations and make appropriate regulatory decisions.

**Promote rational and ethical prescription and appropriate use of medicines (11)**

In light of WHO global statistics on irrational use of medicines and although scant local data are available in this regard, there are strong indications that irrational use of medicines is quite prevalent in Uzbekistan. The best efforts to improve access to quality-assured medicines are wasted if medicines are not prescribed and used appropriately. Irrational use of medicines has health and financial consequences. There is ample anecdotal evidence of the pharmaceutical industry negatively influencing the prescribing behavior and indulging in direct-to-consumer advertisement in Uzbekistan, which is commensurate with evidence from various countries. It is strongly recommended that MoH make institutional arrangements for promoting ethical and rational prescribing and use of medicines. Various strategies can encourage an appropriate use of medicines, including, educational, regulatory, managerial, and administrative interventions at various levels starting from education and training of medical students to public education on the rational use of medicines. Some countries have established a separate National Drugs and Therapeutic Committee with the sole responsibility of monitoring and promoting rational use, and other countries have included this function in the mandate of the National Committee for the Selection and Use of Essential Medicines. The latter is recommended for Uzbekistan. Some elements of rational use are already being practiced, for example, the development of standard therapeutic guidelines by the Chamber of Innovative Healthcare but in the absence of a comprehensive national plan, this work is not being fully implemented.

**Specific Actions:**

- ✓ Review and improve regulations for direct-to-consumer marketing and advertisement of medical products.
- ✓ National Committee for the Selection and Use of Essential Medicines to devise a national plan for the promotion of rational use of medicines including but not limited to:
  - Establishment of Drugs & Therapeutics Committees in health facilities
  - Education and training on good prescribing through including in medical curricula
  - Public education campaign on rational use of medicines
  - Promoting research on prescription and use of medicines

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<sup>139</sup> Private local pharmacies in low- and middle-income countries: a review of interventions to enhance their role in public health: <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/i.1365-3156.2009.02232.x>

SUMMARY OF CHALLENGES AND RECOMMENDATIONS FOR PHARMACEUTICALS AND MEDICAL DEVICES SUPPLY CHAINS

<b>BIG PICTURE</b>		
	<b>THE MOH NEEDS TO IMPROVE THE PERFORMANCE OF THE MEDICINE AND MEDICAL DEVICES SUPPLY CHAINS BY:</b>	
	<ul style="list-style-type: none"> <li>• Ensuring access to safe, effective, and quality-assured affordable essential medicines and medical devices;</li> <li>• Developing and strengthening fit-for-purpose regulatory and other institutions and human resources for pharmaceuticals and medical devices;</li> <li>• Advancing self-reliance by building national pharmaceutical and medical device industry to produce quality-assured medicines; and</li> <li>• Promoting ethical and rational use of medicines and medical devices by health care providers and consumers.</li> </ul>	
	<b>CHALLENGES</b>	<b>RECOMMENDATIONS for REFORM</b>
<b>1</b>	<u>Restrictive access to medicines for low-income and other vulnerable groups.</u> Despite the current benefit package that was introduced in 1996, people, including low socio-economic class and vulnerable groups, must make frequent out-of-pocket expenditures to buy medicines at all levels of the health care system. There is no financial protection for the poor and vulnerable segments in society.	Review the current medicine pricing regulation policy Develop an ongoing system to measure medicine prices, availability, affordability, and price components
<b>2</b>	<u>75% of medicines, by value, are imported.</u> Government is encouraging local manufacturing, and there are positive trends. However, 75% of the medicines by value are still imported. There is no comprehensive strategic approach in promoting local production, and there are missed opportunities. People and medical practitioners do not trust locally produced medicines and prefer imported products.	Develop a National Pharmaceutical Manufacturing Development Strategy – 2030. All local pharmaceutical manufacturing companies in Uzbekistan should fully comply with National GMP Guidelines by 31 December 2023, and government should take measures to build people’s confidence in locally produced medicines.
<b>3</b>	<u>Regulation of medicines is not independent and suffers from confluence of competing interests.</u> Currently, the regulatory department in MoH is part of the Agency for Pharmaceutical Manufacturing Development, and hence there are inherent competing interests. Global good practice is to establish independent regulatory authority as a legal entity.	Establish an independent (legal entity) and competent Medicines Regulatory Authority of Uzbekistan which is free of competing interests, and which has an autonomous governance structure that includes the MoH.
<b>4</b>	<u>Selection, procurement and supply of medicines (i.e., supply chain management) need major improvements.</u> The medicine supply system is fraught with problems. 80% public procurement of medicines is done directly by the health facilities, on monthly basis through bidding. Approximately 700 distributors can take part in bidding. The lowest price is the only criteria in procurement.	Develop, implement, and review the National Essential Medicines List regularly. Re-establish an efficient and reliable medicine and medical device supply management system in the public sector. Effectively control the sale of medical products through private pharmacies.
<b>5</b>	<u>Unethical and irrational prescribing, sale, and use of medicines.</u> Irrational use of medicines is a major problem in most countries, and it undermines efforts to improve access to medicines. It negatively affects health and has financial consequences. There is no local data, but observation, interviews, and anecdotal evidence indicate widespread irrational prescribing and use of medicines in Uzbekistan.	Develop a capital investment policy for the health sector of the Republic of Uzbekistan. Build capacity in needs-based planning. Start with investment prioritized; then consider the role of PPPs in delivering them. Take action to ensure that the use of PPPs does not threaten the fiscal sustainability of the health system at national / oblast levels.

## PAPER 7: Public Health

### Introduction

The goal of the Public Health (PH) block evaluation was to perform a comprehensive overview of the PH functions in the health system of Uzbekistan in order to identify strengths and weaknesses and prioritize both the short- and long-term interventions to achieve improved PH coverage nationwide. A globally used approach to carry out a situational analysis was identified and several missions to Uzbekistan were undertaken with numerous interviews and visits to healthcare facilities. The initial situation analysis revealed problems with the surveillance systems, low quality of data, insufficient epidemiologic resources and laboratory services, barriers to identifying, monitoring, and controlling risks and harm to health, the safety of water, food, and consumer products and environment, and a high burden of traffic accidents. Overall, there is insufficient public health capacity to effectively monitor and control risk factors and diseases.

PH is a top priority on the agenda of the government of Uzbekistan, and as a result, many regulations have been adopted to improve the healthcare system in general and public health management, in particular. For example, the Presidential Decree No. UP-5590<sup>140</sup> dated December 7, 2018, noted the need to improve the system of state sanitary and epidemiological surveillance, increase their role and responsibility in overseeing compliance with sanitary rules, norms, and hygiene standards, to protect the health of the population, and to introduce new laboratory technologies and express diagnostics of pathogenic factors. To ensure that these tasks are recognized as part of the Health Systems Strategy 2030, a group of international and local experts has conducted a situation analysis of sanitary and epidemiological services and surveillance systems for communicable and non-communicable diseases in Uzbekistan and has developed recommendations for improving prioritized PH services.

The approach chosen was to initially set high-level PH objectives for the Uzbekistan Health System Strategy 2030 and to narrow down the focus of the situation analysis. The scope and focus of the PH assessment is consistent with the WHO guidelines, which use the analysis of key operational functions of PH developed to build a dialogue on the strengths, weaknesses, and gaps in PH, and to generate policy options or recommendations for PH reform, promote the development of PH policies and apply those for educational and training purposes. The team used “Self-Assessment Tool for Essential Public Health Operations in the WHO European Region” developed by the WHO Regional Office for Europe<sup>141</sup>. The data for the situation analysis was collected based on interviews with local public health officials and healthcare workers, including visits to organizations that perform public health functions. The team also used published evaluation reports of international organizations, scientific articles, as well as official data and information provided by the MoH. Availability of information on the PH sector, limited access to data, and the inability to validate the quality of the data received were the main issues encountered when carrying out the situational analysis, which limited the scope and scale of the report.

### Situational analysis

**Analysis of main challenges.** Overall, the existing system of epidemiological and laboratory surveillance and action is fragmented as some functions directly relate to health but are distributed among various ministries and entities and, therefore, are not integrated into a single system that would allow timely data collection, information exchange, analysis, and action. Many of these issues are systemic in origin and became more evident and pronounced during the COVID-19 pandemic. This requires the strengthening of the registration and reporting systems, organizational structure, and human resources among others to enable proper performance of essential PH functions to improve the health of the population through better monitoring and action.

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<sup>140</sup> <https://lex.uz/docs/4096199>

<sup>141</sup> <https://apps.who.int/iris/bitstream/handle/10665/344398/9789289050999-eng.pdf?sequence=1&isAllowed=y>

The situational analysis has identified eleven key underlying issues that impede the effective implementation of high-level PH objectives:

### **Civil registration and vital statistics have not been transferred to the new classification (1)**

The legal framework for civil registration and vital statistics is provided under the law "On acts of civil status"<sup>142</sup>. It covers vital records of life events kept under governmental authority (birth, marriage, divorce, adoption, paternity, name change, death) through the city and regional units of the Civil Registry of the Ministry of Justice.

From April 1<sup>st</sup>, 2022, in the city of Tashkent, and from July 1, 2022, in the entire country, all births and deaths are registered in an electronic form through the automated information system for electronic registration of birth and death, including perinatal death. Online data is available to the MoH and the Ministry of Justice for analysis and reporting. Uzbekistan has been using the International Classification of Diseases of the 10th revision (ICD-10) since 2013 as a coding and reporting framework, therefore, the registration of births and deaths is also coded and reported according to ICD-10<sup>143</sup>. ICD-11<sup>144</sup> collects and reports more granular data, among other things, and therefore, a faster transition from ICD 10 to ICD 11 is important to improve the granular availability of data to enable targeted actions.

### **A unified electronic system for surveillance of communicable, and non-communicable diseases, and health risk factors is not available (2)**

There are many regulatory documents on mandatory reporting of certain infectious diseases and conditions such as plague, botulism, and post-vaccination complications. However, electronic monitoring is conducted for a limited number of infectious diseases, mostly through vertical non-integrated information systems. For instance, there are two separate electronic registries for HIV and tuberculosis patients, both of which are not integrated with the existing communicable diseases surveillance information system. Electronic registration of vaccination of the population against COVID-19 has been introduced into practice. However, it is fragmented and not integrated with the registry for patients with COVID-19. Despite the fact that more than 60 percent of human infections are zoonotic<sup>145</sup>, there is no integration of data with the State Veterinary Service, which is perhaps a major barrier to the implementation of "One Health " approach.

Information systems for surveillance of non-communicable diseases, maternal and child health, behavioral disorders (for example, mental health), lifestyle and environmental risk factors, and social determinants are not available. Considering that more than 85 percent of deaths are due to noncommunicable diseases and risk factors in Uzbekistan<sup>146</sup>, timely surveillance would help through timely analysis and data-informed decisions, and reduce the risks of morbidity, disease complications, and mortality.

Access to a safe environment (including water, air, and food) and tracking of road injuries are monitored by other ministries and not available for PH analysis and action on a routine basis.

Strengthening information systems in public health is in the government's agenda. For instance, performance indicators for the implementation of the "Concept for the Development of the Health System of the Republic of Uzbekistan for 2019-2025" include electronic tracking of diseases as a priority action<sup>147</sup>. To support this priority, funds are being designated to strengthen information systems in PH. According to order 5129 dated May 27, 2021, "Taking urgent measures to combat the coronavirus infection COVID-19 in the Republic of Uzbekistan "<sup>148</sup> each region will receive funding of US\$ 1.5 million

<sup>142</sup> <https://www.lex.uz/docs/3064983>

<sup>143</sup> <https://www.cdc.gov/nchs/icd/icd10.htm>

<sup>144</sup> <https://icd.who.int/en/>

<sup>145</sup> [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)61678-X/](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)61678-X/)

<sup>146</sup> <https://platform.who.int/mortality/countries/country-details/MDB/uzbekistan>

<sup>147</sup> [https://nrm.uz/contentf?doc=570744 &products=1\\_vse\\_zakonodatelstvo\\_uzbekistana](https://nrm.uz/contentf?doc=570744 &products=1_vse_zakonodatelstvo_uzbekistana)

<sup>148</sup> <https://lex.uz/docs/5436184>

for the implementation of an information and communication system from the Asian Development Bank (ADB) and the Asian Infrastructure Investment Bank.

### **There is no standard approach for the registration of infectious diseases (3)**

The situation analysis findings suggest that the country's sanitary and epidemiological surveillance service lacks a unified approach to recording and registering infectious diseases. This significantly reduces the effectiveness of infection management. As a result, the current surveillance system underestimates the real number of cases, which is not representative, while reporting is delayed and not standardized. Doctors, especially non-infectious disease specialists, often tend to err when examining patients with infectious diseases. This can lead to serious consequences, especially when it comes to highly contagious diseases with a high mortality rate. Such an error can lead not only to a late diagnosis but also to the rapid spread of infection. Internationally, the use of standard case definitions for infectious diseases have become part of medical practice to quickly help doctors and even paramedics to identify infectious cases and report them to PH offices.

The country's sanitary and epidemiological surveillance service has recognized the need for standard definitions for nine highly contagious infections<sup>149</sup>. However, to date, the order has not been fully implemented. In emergency notifications, the category of the case (e.g., presumptive, probable, or confirmed) is still not recorded. In the official registration form No. 060, the titles of nine especially dangerous infections have not changed, and the categories for determining cases have not been indicated. This leads to a significant distortion of the real situation with incidence, and to an underestimation of diseases. For example, a probable case of cutaneous anthrax is still recorded as "carbuncle" unless a lab identifies a causative agent (*Bacillus Anthracis*); or a probable case of Crimean Congo hemorrhagic fever is still reported in the absence of laboratory confirmation as "fever of unknown etiology". The sanitary-epidemiological service only registers laboratory-prone cases of diseases. As a result, the true epidemiological situation is not disclosed, the real incidence rate is significantly underestimated, and most importantly, anti-epidemiological measures are not carried out in full and / or are delayed.

Internationally, standard case definitions are used to record and register infectious diseases<sup>150</sup>. The importance of using standard case definitions<sup>151</sup> is also indicated by the fact that in recent years, the WHO, Centers for Disease Control and Prevention (CDC) has quickly developed and recommended that all countries use uniform standards for the definition of cases of new dangerous diseases such as severe acute respiratory syndrome (SARS), Avian influenza, Middle East respiratory syndrome (MERS), Ebola, Zika virus disease, COVID-19, Monkeypox. Equipped with standard definitions, doctors can easily identify infectious diseases<sup>152</sup>.

### **A modern laboratory management system to improve laboratory operations is not available and existing laboratories are not fully utilized (4)**

The Sanitary and Epidemiological Wellbeing and Public Health Service (SEWPHS) has an extensive laboratory service network encompassing 378 laboratories. According to publicly available documents, US\$ 182.5 million was received from international financial institutions to invest in the re-equipment of existing laboratories, construction and repairs, and information system. Going forward, according to Order 5129, a national reference laboratory network will be created and will be built on seven institutional

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<sup>149</sup> Order of the Minister of Health No. 631 of 2005

<sup>150</sup> 2022 National Notifiable Conditions (Historical) <https://ndc.services.cdc.gov/search-results-year/>

<sup>151</sup> Electronic Case Reporting ( eCR ) <https://www.cdc.gov/ecr/index.html>

<sup>152</sup> Expanding Regional Health Cooperation under CAREC 2030, Scoping Study, July 2021

laboratories. It is expected that 31 regional SEWPHS laboratories will be upgraded to second level biosecurity, and 211 laboratories will be upgraded to first level biosecurity. Technical functioning and funding will be increased in 95 percent of laboratories<sup>153</sup>.

A sustainable laboratory service is critical to improving PH. Situational analysis findings suggest that existing capacity is significantly limited in regional and district laboratories, including the use of modern technologies for registration and labeling of incoming biomaterials and reagents, testing samples, and data analysis. Laboratory information systems are available in two PH laboratories in the country. An external audit by the accreditation centers "TurAK" and "Accreditation Center" was conducted in 28 laboratories. The WHO report "Uzbekistan. Joint External Evaluation"<sup>154</sup> indicates that local diagnostic centers are not equipped with modern equipment and devices, are not accredited in the prescribed manner and needs training of specialists in accordance with international requirements. As noted by WHO, classical methods of laboratory diagnostics are used, including PCR tests, in some laboratories<sup>155</sup><sup>156</sup>. Referral and confirmation procedures are limited. A quality assurance system exists in laboratories but is not mandatory for all laboratories. Based on the data provided by SEWPHS, it is difficult to estimate what percentage of laboratories meet modern requirements. Although laboratories are known to exist in areas where laboratories face daily interruptions in the provision of tap water and electricity (refrigerators are turned off due to a systematic blackout). There are laboratories where there are no generators for back-up and, in some laboratories, new equipment is not in use, etc..

The functioning of sanitary-hygienic, radiological, toxicological, bacteriological, parasitological, and virological laboratories on the territory of the republic, as well as the provision of practical and methodological assistance to them, has certain shortcomings, and, as a result, the extensive laboratory network is not effectively utilized.

#### **Measures to prevent the resistance of microorganisms to antimicrobial drugs need significant upgrading (5)**

Antimicrobial resistance (AMR) is the ability of a microorganism (virus, bacterium, fungus, parasite) to resist the action of a drug. It is a serious, complex, and costly public health problem. AMR makes infections difficult to treat and increases the risk of its spread, severe illness, and death. The main factor in the emergence of drug-resistant pathogens is the inappropriate and excessive use of antimicrobial medications. Therefore, people are infected with resistant microbes, which mainly occurs in medical institutions.<sup>157</sup><sup>158</sup> WHO has identified AMR as one of the ten global threats to human health. Every year, 700,000 deaths worldwide are associated with infections associated with drug-resistant pathogens.<sup>159</sup><sup>160</sup>

The AMR leads to significant economic loss. In addition to death and disability, an AMR leads to a lengthening of the hospital stay and requires more expensive methods of treatment<sup>160</sup>. For example, resistance to ciprofloxacin, an antibiotic commonly used to treat urinary tract infections, for *Escherichia coli* ranged from 8.4 percent to 92.9 percent, or *Klebsiella pneumoniae* from 4.1 percent to 79.4 percent in

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<sup>153</sup> <https://lex.uz/docs/5436184>

<sup>154</sup> Materials of the meeting organized by the WHO office in Tashkent "Uzbekistan. Joint External Evaluation" Tashkent, May 16-20, 2022

<sup>155</sup> List of laboratories authorized in the Republic of Uzbekistan to test for the presence of coronavirus infection (COVID-19) using the PCR method <https://ssv.uz/ru/menu/covid-19>

<sup>156</sup> Development of national laboratory strategies and plans, WHO

[https://www.euro.who.int/\\_data/assets/pdf\\_file/0020/333470/Development-NLSP.pdf](https://www.euro.who.int/_data/assets/pdf_file/0020/333470/Development-NLSP.pdf)

<sup>157</sup> Central Asian and Eastern European Surveillance of Antimicrobial Resistance. CAESAR Manual, Version 3, 2019. Copenhagen: WHO Regional Office for Europe; 2019 <https://www.euro.who.int/en/health-topics/disease-prevention/antimicrobial-resistance/publications/2019/central-asian-and-european-surveillance-of-antimicrobial-resistance-caesar-manual-version-3>

<sup>158</sup> Holmes AH, Moore LSP, Sundsfjord A, et al. Understanding the mechanisms and drivers of antimicrobial resistance. *Lancet* 2016; 387:176–87. DOI: [10.1016/S0140-6736\(15\)00473-0](https://doi.org/10.1016/S0140-6736(15)00473-0)

<sup>159</sup> WHO Euro. A health perspective on the role of the environment in One Health, 2022.

<https://apps.who.int/iris/bitstream/handle/10665/354574/WHO-EURO-2022-5290-45054-64214-eng.pdf?sequence=1&isAllowed=y>

<sup>160</sup> WHO Euro. Central Asian and European Surveillance of Antimicrobial Resistance. Annual report [2020 .pdf](#)

countries reporting to the Global Surveillance System for Antimicrobial Resistance and Use (GLASS)<sup>161</sup>. Resistance to inexpensive and effective drugs is emerging at an alarming rate. This entails a sharp increase in the cost of treating common infections.

There are very few published data on the prevalence of AMR in Uzbekistan<sup>163 162</sup>. However, over the past few years, multidrug-resistant (MDR) and extensively drug-resistant bacteria have been identified. Uzbekistan is on the list of the top 15 countries in the WHO European Region with a high burden of MDR-TB.

In 2013, the government adopted a resolution of the Cabinet of Ministers "On the establishment of the National Center for Antimicrobial Resistance at Scientific Institute on epidemiology, microbiology, and infectious diseases"<sup>163</sup>. Implementation of this resolution has begun with international support (CDC, WHO) (2013). Sentinel epidemiological surveillance has recently begun in Tashkent. Biological materials are collected from five large urban clinical hospitals. The "National Program to Combat Antimicrobial Resistance in the Republic of Uzbekistan for 2022-2026" has been developed, but it has not yet been approved. There is a national plan for the prevention of infectious diseases in animals, but it does not address AMR. A Multisectoral Coordination Committee has been established and an action plan has been created, but there is no data on its implementation yet. Clinical laboratories performing antibiotic susceptibility testing do not report AMR at the national level. Clinical guidelines on the prudent use of antibiotics are scarce. Guideline implementation is poorly controlled. There is no coordination of health care systems, veterinary medicine, agriculture, and ecology in the fight against the development of antibiotic resistance, to control the unreasonable use of antibiotics in animal husbandry and poultry farming. The capacity of the laboratory services to monitor AMR is insufficient and is compounded by a lack of trained personnel.

#### **Despite the high burden of road traffic accidents, no epidemiological surveillance of road safety exists (6)**

According to WHO data, 3,500 people, including 500 children, die every day in road traffic accidents (RTA) worldwide. This represents about 1.3 million people a year. About 50 million more people are injured every year, often with consequences and disability for life. Children and young people between the ages of 5 and 29 are at greater risk of dying from road traffic crashes than from any disease or other health risk. All these facts confirm that road safety is a challenge for all countries<sup>164</sup>.

The current road injury tracking system in the country does not provide reliable data on the PH burden of road traffic injuries, including disability and death. SEWPHS does not conduct epidemiological surveillance of road traffic injuries at all. For instance, in China, the data on injuries and deaths from traffic accidents are reported by police and are often underestimated by 3 times compared with the data from the PH system<sup>165</sup>.

According to the State Committee on Statistics of the Republic of Uzbekistan, traffic accidents, depending on the year, are the top causes of mortality (top 5-7)<sup>166</sup>. In 2021, according to the Ministry of Internal Affairs, the total number of deaths from road accidents was nearly 2,500 people<sup>167</sup>, which is 1.7 times

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<sup>161</sup> Antimicrobial resistance: global report on surveillance 2014. Geneva: World Health Organization; 2014 accessed 25 September 2018 <http://www.who.int/drugresistance/documents/surveillance-report/en>

<sup>162</sup> Materials of the meeting organized by the WHO office in Tashkent "Uzbekistan. Joint External Evaluation" Tashkent, May 16-20, 2022

<sup>163</sup> Davlat statistics qo'mitasi <https://stat.uz/uz/rasmiy-statistika/demography-2>

<sup>164</sup> High-Level Meeting on Global Road Safety - General Assembly, 92nd plenary meeting, 76th session. Jul 1, 2022 <https://media.un.org/en/asset/k1/k116zsr05>

<sup>165</sup> Ma S, Li Q, Zhou M et al. Road traffic injury in China: review of national data sources // Traffic injury prevention. 2012, 57-63. 13 suppl 1. <https://www.tandfonline.com/doi/full/10.1080/15389588.2011.633945>

<sup>166</sup> Davlat statistics qo'mitasi <https://stat.uz/uz/rasmiy-statistika/demography-2>

<sup>167</sup> Road safety for children is everyone's responsibility. May 13, 2022. <https://www.unicef.org/uzbekistan/en/road-safety-for-children>

greater than the total number of officially reported deaths from COVID-19 in the country end of 2021<sup>168</sup>. Among the victims of traffic accidents, 1209 were children, of that number, 246 died; 70 percent of injured and deceased children were pedestrians, 10 percent were cyclists, and 20 percent were car passengers. In the first three months of 2022, 1,469 road accidents were registered, in which 204 children were injured and 39 died. The speed violation was responsible for road injuries and deaths in 31 percent of cases<sup>170</sup>.

According to the World Bank, there are over 3.5 thousand deaths, and over 54 thousand severe injuries on average per year in Uzbekistan, with an annual economic toll of US\$ 3 billion; 84 percent of these losses are observed among the economically active population group (15-64 years)<sup>169</sup>.

Road injuries carry a heavy economic burden. The costs of eliminating the consequences of road accidents annually accounted for 2–5 percent of GDP globally<sup>170</sup>. Calculations have shown that due to international investments, road safety was significantly improved in 10 low- and middle-income countries, with potentially 311,758 lives saved from 2007 to 2030<sup>171</sup>.

The UN General Assembly has set a target to reduce the number of deaths and injuries from traffic accidents by 50 percent by 2030<sup>172</sup>. According to WB estimates, if the country invests 0.2 percent of GDP in road safety program annually, it will be possible to achieve a decrease in deaths by 1,296 per year<sup>173</sup>.

### **Measures to ensure access to treatment, care, and support for patients with HIV are not sufficient to achieve the WHO 95-95-95 targets by 2030 (7)**

The assessment of the situation with HIV, an infection caused by the human immunodeficiency virus, in the country was compiled based on documents shared by the Republican Center for Combating HIV/AIDS and publicly available information from WHO and UNAIDS. According to UNAIDS, in Uzbekistan the estimates are as follows<sup>174</sup>:

- Total number of people infected with HIV in 2020 – 58,000 (52,000-69,000), of which children 0-14 years old – 4,100 (3,900 – 4,400)
- HIV prevalence among adults 15-49 years old - 0.2 percent
- Compared to 2010, by 2020 the detection of new cases of HIV has decreased by 45 percent, and the number of deaths from AIDS has decreased by 24 percent.

The WHO 95-95-95 targets remains elusive, with only 78 percent of people living with HIV (PLHIV) knowing their HIV-positive status (according to UNAIDS-76%), 59 percent receiving antiretroviral therapy (ARVT) (according to UNAIDS – 54 percent), 74 percent with undetectable viral load among those on ARVT (UNAIDS, no data). HIV testing remains unacceptably low among key populations, such as injection drug users (IDUs) – 31 percent; sex workers – 16 percent; and men who have sex with men (MSM) – 4 percent<sup>175</sup>.

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<sup>168</sup> COVID-19 in Uzbekistan. <https://www.gazeta.uz/ru/coronavirus-stat/>

<sup>169</sup> World Bank Group. GRSF. road safety country profile. Uzbekistan <https://www.roadsafetyfacility.org/country/uzbekistan>

<sup>170</sup> High-Level Meeting on Global Road Safety - General Assembly, 92nd plenary meeting, 76th session. Jul 1, 2022 <https://media.un.org/en/asset/k1/k11l6zsr05>

<sup>171</sup> Hendrie D, Lyle G, Cameron M. Lives Saved in Low-and Middle-Income Countries by road safety initiatives founded by Bloomberg Philanthropies and Implemented by their partners between 2007-2018 // Intern journal of environmental research and public health, 2021, 18 (21) <https://www.mdpi.com/1660-4601/18/21/11185>

<sup>172</sup> Political Declaration of the High-Level Meeting on Improving Global Road Safety “The 2030 horizon for road safety: securing a decade of action and delivery” <https://www.un.org/pga/76/wp-content/uploads/sites/101/2022/06/23-June-Political-Declaration-on-Road-Safety.pdf>

<sup>173</sup> WHO Euro. A health perspective on the role of the environment in One Health, 2022 <https://apps.who.int/iris/bitstream/handle/10665/354574/WHO-EURO-2022-5290-45054-64214-eng.pdf?sequence=1&isAllowed=y>

<sup>174</sup> UNAIDS (2020) <https://www.unaids.org/en/regionscountries/countries/uzbekistan>

<sup>175</sup> UNAIDS (2020) <https://www.unaids.org/en/regionscountries/countries/uzbekistan>

These high-risk groups largely determine the success of preventive measures in the country but the coverage of preventive measures for them remains quite low. No data was provided on how the AIDS Center combats stigmatization and discrimination against PLHIV. The country does not use opioid substitution therapy. The average price for first-line drugs is US\$ 75.80 per year. In 2021, from the state budget, US\$4.14 million were allocated to manage HIV infection in addition to the Global Fund providing approximately US\$1.1 million<sup>176</sup>.

Punitive measures in legislation against persons who are at high risk of contracting HIV infection remain, which makes it difficult to identify and involve high-risk groups in preventive measures<sup>177</sup>. WHO's "test and treat" approach, patient-centered care, treatment, and follow-up measures for the high-risk groups are poorly implemented. Testing rates are low making the achievement of the target of 95 percent of those infected knowing their status an unattainable goal in the near term. The treatment coverage of PLHIV and those with a low viral load also needs improvement; publicly accessible data on the coverage has not been updated since 2018<sup>178</sup>.

### **Testing of the population for hepatitis B virus (HBV) and hepatitis C virus (HCV) and treatment of patients diagnosed positive is extremely insufficient (8)**

In Uzbekistan, at least 3 percent of the population is estimated to be infected with HCV (1,004,000 people), and 3-5 percent with HBV (1,750,000 people)<sup>179</sup>. The Decree of the President of the Republic of Uzbekistan No. PP-243 of May 16, 2022, was adopted, which sets the goal of reducing new HCV cases by 90 percent and mortality by 65 percent by 2030<sup>180</sup>.

WHO recommends that persons infected with HBV who meet certain criteria receive lifelong treatment and that patients with HCV receive short-term courses of therapy for a complete cure. By implementing these recommendations, many countries such as Egypt, Australia, Georgia, Mongolia, Western European countries, and the USA have achieved a significant reduction in morbidity and death from HBV and HCV. For example, the Government of India offers free testing and treatment for both HBV and HVC. A course of HCV treatment in India costs less than US\$ 40 and a yearly HBV treatment costs less than US\$ 30. Given these low costs, treating patients with HCV will pay off in future healthcare costs saved in three years. Pakistan has proven that treating all patients diagnosed with HCV for three consecutive years will lead to lower healthcare cost<sup>181</sup>.

In Uzbekistan, however, most of the patients infected with HBV and HCV do not receive appropriate treatment. It is known that chronic hepatitis progresses to cirrhosis then to hepatocarcinoma and death. In Uzbekistan, 60 percent of those infected with HBV and 75 percent of HCV are not aware of their status<sup>182 183</sup>. Data shows that with the current low rates of treatment coverage in Uzbekistan, the country's target indicators can only be achieved by 2051, while at the same time if patients with HCV are treated, the costs will be compensated in 3 years 9 months<sup>184</sup>.

### **Recommendations and Actions**

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<sup>176</sup> Order No. 219 of September 6, 2021 "On measures to prevent HIV infection in the Republic of Uzbekistan and further improve the organization of medical care."

<sup>180</sup> <https://www.gazeta.uz/ru/2022/08/30/compulsory-medical-examination/>

<sup>181</sup> [www.speed.uz](http://www.speed.uz)

<sup>182</sup> Uzbekistan hepatitis elimination project (u hep) <https://cdfaound.org/uhep-methodology/>

<sup>183</sup> Decree of the President of the Republic of Uzbekistan No. PP-243 dated May 16, 2022 "On improving measures to counter the spread of certain topical viral infections" <https://lex.uz/ru/docs/6017479>

<sup>184</sup> <https://www.who.int/ru/news/item/26-07-2019-who-urges-countries-to-invest-in-eliminating-hepatitis>

<sup>182</sup> Rick Dunn; Erkin Musabaev, Homie Razavi, Shakhlo Sadirova et al // Progress Toward Hepatitis B and Hepatitis C Elimination Using a Catalytic Funding Model — Tashkent, Uzbekistan, December 6, 2019–March 15, 2020 MMWR / August 28, 2020 / 69(34);1161–1165 <https://www.cdc.gov/mmwr/volumes/69/wr/mm6934a3.htm>.

<sup>183</sup> Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated February 21, 2022 No. 83 "On additional measures to accelerate the implementation of national goals and objectives in the field of sustainable development for the period up to 2030". Tasks No. 3.c. (<https://lex.uz/docs/5870397>)

<sup>184</sup> Uzbekistan hepatitis elimination project (u hep) <https://cdfaound.org/uhep-methodology/>

The recommendations for addressing public health challenges for the Health System Strategy of Uzbekistan 2030 are primarily aimed at strengthening the SEWPHS to ensure timely PH action.

### *A vision of the future*

1. A unified electronic system for surveillance of infectious, non-communicable diseases and risk factors is implemented to allow timely analysis and interpretation of data and informed decision-making.
2. An up-to-date recording and reporting systems in accordance with international standards to enable the collection of the right data at the right time. This would among others include the use of the latest classification system and case definitions to collect and report vital statistics and infectious diseases.
3. Expansion of the SEWPHS functions to correspond to the WHO's essential PH operations to minimize fragmented/siloed approaches in monitoring and action.
4. An improved epidemiological surveillance of road traffic accidents to inform data driven PH action.
5. Timely diagnosis and adequate treatment HIV/AIDS, HBV and HCV patients to minimize infection transmission and disease complications.
6. An improved monitoring and control of risk factors and diseases associated with food, water and the environment to reduce associated morbidity and mortality through 'one health' approach.

The following nine (9) recommendations relate directly to the underpinning recommendations outlined above.

### **Implement ICD-11 in civil registration and vital statistics data collection and reporting (1)**

The MoH is a key decision-maker in formulating actions targeting premature mortality. More granular data on births and death, including causes of death and risk factors, will enable more targeted actions.

#### **Specific actions**

- ✓ Revise birth and mortality registration forms to improve alignment with international death registration practices. Update a classification system in the existing electronic system "Electronic registration of birth and death, including perinatal death" from ICD-10 to ICD-11.
- ✓ Prepare an online training course for healthcare professionals on proper registration of newborns, causes of death, and determinants of health.
- ✓ Prepare and make publicly available annual analytical reports on mortality and births.

### **Establish an integrated electronic epidemiological and laboratory surveillance system for communicable and non-communicable diseases (2)**

The existing stand-alone electronic surveillance should be critically assessed for performance and integration. Based on assessment findings a unified architecture for electronic surveillance systems should be designed and supported with a roadmap of key steps. The unified architecture should ensure exchange with the animal disease surveillance systems. For highly pathogenic conditions, special features enabling rapid alerts should be incorporated to allow for an immediate response to outbreaks. The main advantage of this system is the increase the efficiency of obtaining data and the speed of implementation of targeted preventive measures.

#### **Specific actions**

- ✓ Critical assessment of the existing surveillance systems within MoH and veterinary systems
- ✓ Development of a unified architecture with a roadmap of actions
- ✓ Implementation of a unified surveillance system

To fill data gaps in areas where primary data is not routinely collected by the health system, regular surveys (every 3–5 years) using validated international survey tools are proposed, to be financed by the Ministry of Innovative Development research grants. Potential areas for the surveys include communicable and non-communicable diseases, maternal and child health, and social and behavioral determinants of health. Building and strengthening the country's capacity to conduct and analyze national surveys would also be a key outcome of this activity. The examples of potential surveys are the Demographic and Health Survey (DHS), the UNICEF Multiple Indicator Cluster Survey, the Nutrition Survey 2019.

### **Introduce standard case definitions for notifiable diseases (3)**

The Decree of the President No. UP-5590 of December 7, 2018,<sup>185</sup> notes the need to implement a system of standardization in the field of healthcare. Standardization is a key step in improving the efficiency of epidemiological surveillance. The introduction of standard case definitions into practice will allow for 1) rapid and early notification of a detected infectious disease, 2) prompt response by an epidemiologist and prevention of the spread of infection, and 3) accuracy, reliability, and a unified approach across the country in case detection. Standardization contributes to compliance with the IHR and to increase the preparedness of the sanitary and epidemiological service system for emergencies, including pandemics, as indicated in the Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 83, task 3 d<sup>186</sup>.

A standard case definition is a set of objective and agreed-upon criteria by which a healthcare professional decides whether a patient has a reportable disease or not. The list of criteria includes main symptoms and other clinical signs of the disease, laboratory data, and epidemiological data.

The wording of the case definition has a direct impact on the degree of sensitivity and specificity of epidemiological surveillance. The broader the definition, the more sensitive the surveillance, and vice versa, the more precise the case definition used, the less sensitive but more specific the tracking system becomes. To provide both sensitive and specific surveillance, several categories of case definitions are used to classify the disease with varying degrees of precision: suspected, probable, confirmed.

The use of several categories of case definition allows to detect diseases as soon as the patient first encounter with the health system has taken place. However, this would require that the “List of standard definitions of cases of infectious diseases”, approved and published, is available to every primary health care doctor and also be made available in the emergency rooms.

Regardless of skill level, a doctor or paramedic should be able to easily classify a case based on a standard case definition. Standardization will make it possible to achieve a unified approach of doctors and paramedics in the diagnosis and notification of infections and to compare the incidence rate not only within but also across countries.

### **Specific actions**

- ✓ Implement standard case definitions. To do this:
  - definition developed by international organizations, as well as the standards used in developed countries can be a starting point.
  - A working group of experts from among local scientists and epidemiologists will adapt definitions for at least 50 notifiable conditions in Uzbekistan to a local context.
  - Adapted definitions reviewed, tested, and then approved by the order of the Minister of Health for routine practice, with required changes made in registration and notification forms (e.g., No. 058, No. 060).

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<sup>185</sup> <https://www.lex.uz/docs/4096199>

<sup>186</sup> <https://lex.uz/docs/5870397>

- Training modules developed and trainers of trainers among PH workers are organized. using a hybrid form of training based on online courses. Trained trainers will then independently train local practicing doctors in their respective regions.
- Case definitions are published as a reference handbook for practicing physicians. The principle of diagnosis and notification based on standard case definitions are introduced into the curriculum of students in infectious diseases and epidemiology in medical and other health professional schools throughout the country.

#### **A modern laboratory should work in accordance with the principles of quality and safety (4)**

A well-functioning PH laboratory service is critical to improving PH. Given the lack of data, a comprehensive assessment, including the assessment of equipment inventory and performance is needed. Based on assessment findings, a master plan for improving the PH laboratory services should be developed building on the revised concept of PH laboratory services, including taking into account advances in laboratory technology and information system. A revised concept of laboratory services is important as the current laboratory services network largely dates from the norms put in place during the Soviet Union times based on the technologies available at that time. For example, laboratories equipped with high throughput automated systems may not require such a large network of laboratories, many of which are low-capacity and often inefficiently run, especially those at a district level. Laboratory hubs with proper logistics and information systems should be able to replace many district laboratories. Integration (as in data exchange) between the SEWPHS and veterinary service laboratories is critical to accurate and rapid detection of infections of zoonotic origin.

The COVID-19 pandemic led to many private laboratories offering infection testing<sup>187</sup>. However, their activities are not always monitored by SEWPHS leaving large gaps in data.

#### **Specific actions**

- ✓ National Reference Laboratory of the SEWPHS should coordinate the work of all sanitary-hygienic, radiological, toxicological, bacteriological, parasitological, and virological laboratories on the territory of the republic, and should provide them with practical and methodological assistance<sup>188</sup>. The National Reference laboratory should develop a strategy for the development of the service according to the principle “Better [Laboratories for Better Health](#)”<sup>189</sup>. The National Reference Laboratory Council should advise and provide oversight on:
  - a. national standards for laboratories at the national, provincial and district levels
  - b. biological and environmental safety standards
  - c. external and internal quality assessment program
  - d. accreditation of all existing laboratories
  - e. inventory of PH laboratories to identify low capacity or poor performing laboratories
  - f. training and retraining of specialists, including continuing professional development
  - g. measures to implement the biosafety and biological security program.
  - h. mechanisms for providing laboratories with nutrient media, laboratory equipment, communications, development of an optimal supply chain for consumables.
  - i. mechanisms for the integration of PH and veterinary laboratory services
  - j. compliance monitoring for PH laboratories.
- ✓ Improve the use of the capacities of the 17 regional laboratories for highly pathogen infections (EDI), equipped with modern equipment, created within the framework of the initiative of the MoH and the United States Department of Defence.

The implementation of these measures will significantly improve the quality of laboratory services and increase the efficiency and safety of laboratory services and, accordingly, lead to an improvement of PH.

<sup>187</sup> <https://ssv.uz/ru/menu/covid-19>

<sup>188</sup> <https://lex.uz/ru/docs/4914450>

<sup>189</sup> WHO <https://www.who.int/europe/initiatives/better-labs-for-better-health>

It should be noted that the investment projects planned by the Government with financial support from the ADB and AIIB provides financing only for the measures indicated in a , b , f , g above.

### **Strengthen the epidemiological and laboratory surveillance of AMR (5)**

The widespread availability of antibiotics, inappropriate use of antibiotics by the population, and excessive and inappropriate prescription by physicians are major risk factors for AMR in Uzbekistan. Widespread and uncontrolled use of antibiotics by veterinarians and in the plant protection service is also a major concern. This has resulted in increased contamination of the environment, soil, and water with microorganisms resistant to antibiotics<sup>190 191 192</sup>.

#### **Specific actions**

- ✓ Adoption of the National Antibiotic Resistance Control Plan for 2022-2030, where the National Center for Antimicrobial Resistance takes a leading role in coordinating the efforts across public health, veterinary medicine, plant protection services, and ecology.
- ✓ The Multisectoral Coordination Committee should manage the laboratory services of various branches to study and implement strategies to combat the spread of resistant strains of microorganisms and control the use of antibiotics. A specific plan of interaction for 2023-2030 should be developed, including the establishment of sentinel epidemiological surveillance.
- ✓ AMR reports on resistance of local circulating microorganisms should be systematically shared with health facilities to inform on the rational use of antibiotics.
- ✓ Establish mechanisms for systematic assessment of antibiotics in food, with actions on effective monitoring and control of antimicrobial agent use in farms. Laboratory capacity for testing residual concentrations of antibiotics in food and animal products is already available within the PH sector.
- ✓ Improve national clinical practice guidelines on the rational use of antibiotic therapy.

### **Establish a subdivision for epidemiological surveillance of road injuries under SEWPHS (6)**

Granular data on traffic injuries is important for decision-making at the national level. There is an urgent need to strengthen and integrate the existing surveillance systems in the country to better track traffic accidents and fatalities and identify risk groups and factors. The Ministry of Internal Affairs maintains accident statistics. Data on traffic-related deaths are also available in the Department of Statistics of the MoH in accordance with ICD-10<sup>193</sup>. However, the PH service does not conduct epidemiological surveillance of road traffic crashes, which makes it impossible to accurately estimate the number of deaths and the consequences of road traffic injuries and risk factors. As the main burden of road traffic injuries falls on the healthcare system<sup>194 195 196</sup>, public health should play a more active role in collecting and acting on the road traffic injuries data.

#### **Specific actions**

- ✓ Establish a road accident epidemiological surveillance unit within the SEWPHS to better track road traffic injuries and provide reliable and high-quality data to decision-makers in order to develop targeted, region-specific preventive measures.

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<sup>190</sup> Central Asian and Eastern European Surveillance of Antimicrobial Resistance. CAESAR Manual, Version 3, 2019. Copenhagen: WHO Regional Office for Europe; 2019 <https://www.euro.who.int/en/health-topics/disease-prevention/antimicrobial-resistance/publications/2019/central-asian-and-european-surveillance-of-antimicrobial-resistance-caesar-manual-version-3>

<sup>191</sup> Holmes AH, Moore LSP, Sundsfjord A, et al. Understanding the mechanisms and drivers of antimicrobial resistance. Lancet 2016; 387:176–87. DOI: [10.1016/S0140-6736\(15\)00473-0](https://doi.org/10.1016/S0140-6736(15)00473-0)

<sup>192</sup> WHO implementation handbook for national action plans on antimicrobial resistance/ Guidance for the human sector, 2022 <https://apps.who.int/iris/rest/bitstreams/1412287/retrieve>

<sup>193</sup> <https://www.cdc.gov/nchs/icd/icd10.htm>

<sup>194</sup> Azami-Aghdash S, Gorji H, Gharaee H et al. Role of health sector in road traffic injuries prevention: a public health approach // Intern journal of preventive medicine. 2021, 150, 12 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8631116/>

<sup>195</sup> World Bank Group. GRSF. road safety country profile. Uzbekistan <https://www.roadfacility.org/country/uzbekistan>

<sup>196</sup> ADB. Road Safety Report Card for the CAREC Region. July 2022 <https://www.adb.org/publications/road-safety-report-card-carec-region>

- ✓ Based on epidemiological surveillance data, perform analytical studies based on the infrastructure of each region to determine the frequency, causes and consequences of road injuries, risk factors, develop specific recommendations to reduce road accidents, including communication measures to influence behavioral factors in high-risk groups. These studies should be funded by the Ministry of Innovative Development research grants.
- ✓ Assess the timeliness and effectiveness of proper emergency medical care for people affected by road injuries and suggest ways to improve to achieve a 50 percent reduction in road traffic deaths by 2030.
- ✓ Run behavioral change campaigns on the benefits of protective helmets while cycling, seat belts, etc.

### **Strengthening the fight against HIV infection (7)**

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 83 of 2022 on the sustainable development of the country emphasizes the need to strengthen the fight against HIV (task 3.3)<sup>197</sup>. Three action areas are recommended for strengthening: 1) HIV prevention, 2) treatment and support strategies, and 3) the protection of the rights of PLHIV. These measures should help ensure access to HIV prevention, treatment, care, and support.

#### **Specific actions**

- ✓ Strengthen data collection and analysis through continuous training. Specifically, improvements in qualitative data collection will inform targeted interventions. The new WHO “Consolidated HIV strategic information guidelines. Driving impact through program monitoring and management”<sup>198</sup> can be used as a guiding document.
- ✓ Ensure universal access to ART for PLHIV through maximized coverage with testing and treatment. The new WHO “Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach” can be used as a guiding document<sup>199</sup>.
- ✓ Eliminate discrimination and stigmatization of PLHIV that are an obstacle to universal access. Education of tolerance among the population towards PLHIV. People living with HIV and those who are at increased risk of contracting HIV should know their rights in relation to HIV. Ensure that HIV programs reach the most vulnerable communities that do not receive all the necessary services. Revise punitive laws and individual coercive regulations relating to HIV-infected people, sex workers, IDUs and MSM. The success of the implementation of these measures can be assessed using the 40 most important indicators proposed by WHO and the criteria for assessing discrimination and stigmatization.

### **Increasing the number of populations testing for HBV and HCV and a gradual increase in specific treatment coverage of identified patients (8)**

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated February 21, 2022, No. 83 indicates the need to create conditions for the population to have access to modern diagnostic and treatment tools<sup>200</sup>. However, the plan is not supported by sufficient budget allocations to reduce morbidity by 90 percent and mortality by 65 percent. In general, investing in universal access to the diagnosis and treatment of hepatitis will provide economic returns of 1:6 - 1: 8 in about 4 years.

<sup>197</sup> <https://lex.uz/docs/5870397>

<sup>198</sup> WHO 2020 <https://www.who.int/publications/i/item/9789240000735>

<sup>199</sup> WHO 2021. <https://www.who.int/publications/i/item/9789240031593>

<sup>200</sup> Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated February 21, 2022 No. 83 "On additional measures to accelerate the implementation of national goals and objectives in the field of sustainable development for the period up to 2030". Tasks No. 3.c. (<https://lex.uz/docs/5870397>)

## Specific actions

- ✓ Develop a plan to strengthen the testing strategy and expand access to treatment not only for HCV but also for HBV for 2022-2030
- ✓ Ensure that the government set (dated May 16, 2022, No. PP-243, paragraph 17201) goals of bringing the screening level to 90 percent; bringing the work on treatment coverage to 90 percent are achieved
- ✓ Diagnosis and management of hepatitis B and hepatitis C should be undertaken at district hospitals and FM polyclinics. This would require strengthening primary care capacity with relevant tests and medications such as rapid tests for anti-HCV and HBsAg, HCV RNA (cor antigen or PCR test), PCR for HCV RNA. Tests for ALT, AST, platelets, creatinine, ultrasound, testing for HIV, TB, etc.)<sup>202 203 204</sup>
- ✓ Strengthen the educational campaign, explaining the need for a timely cure to prevent the development of cirrhosis and hepatocarcinoma

Proposed indicators for monitoring:

Indicators	Indicators
Monitoring and retention in treatment (for HBV) or referral for complete cure (for HCV)	Share of people: living with viral hepatitis who have been accurately diagnosed, diagnosed and treated (for HCV) diagnosed and treated (HBV), treatment success rate - including viral suppression (for HBV) or complete cure (for HCV)
Final result	morbidity (frequency of new cases of HBV and HCV) mortality from HBV and HCV
Burden of HBV and HCV infections	prevalence of HBV and HCV infection among the population
Diagnostic capabilities	number of health facilities capable of testing for HBV and HCV infection per 100,000 population (for each region of the country)
Prevention	HBV vaccination coverage hepatitis B vaccination coverage at birth or
Additional indicator - progress in the fight against HBV	Proportion of cases with chronic HBV among children at age 5

## Establish the national public health center (9)

The current organizational structure of the republican SEWPHS cannot perform all PH functions including monitoring of non-communicable diseases, it is proposed to introduce several additional departments into its structure, such as 1) epidemiological surveillance of non-communicable diseases, 2) epidemiological surveillance of maternal and child health, 3) epidemiological surveillance of determinants of health. Approximate tasks of the newly created departments are indicated in the scheme below.

The revised structure of SEWPHS should be implemented in phases to ensure that 1) departments for the high-burden areas are prioritized, 2) goals, objectives and rights of each newly organized department are clearly formulated, and 3) staff are trained to undertake these new roles.

<sup>201</sup> <https://lex.uz/ru/docs/6017479>

<sup>202</sup> WHO, 2022. Updated recommendations on simplified service delivery and diagnostics for hepatitis C infection: policy brief <https://www.who.int/publications/i/item/9789240052697>

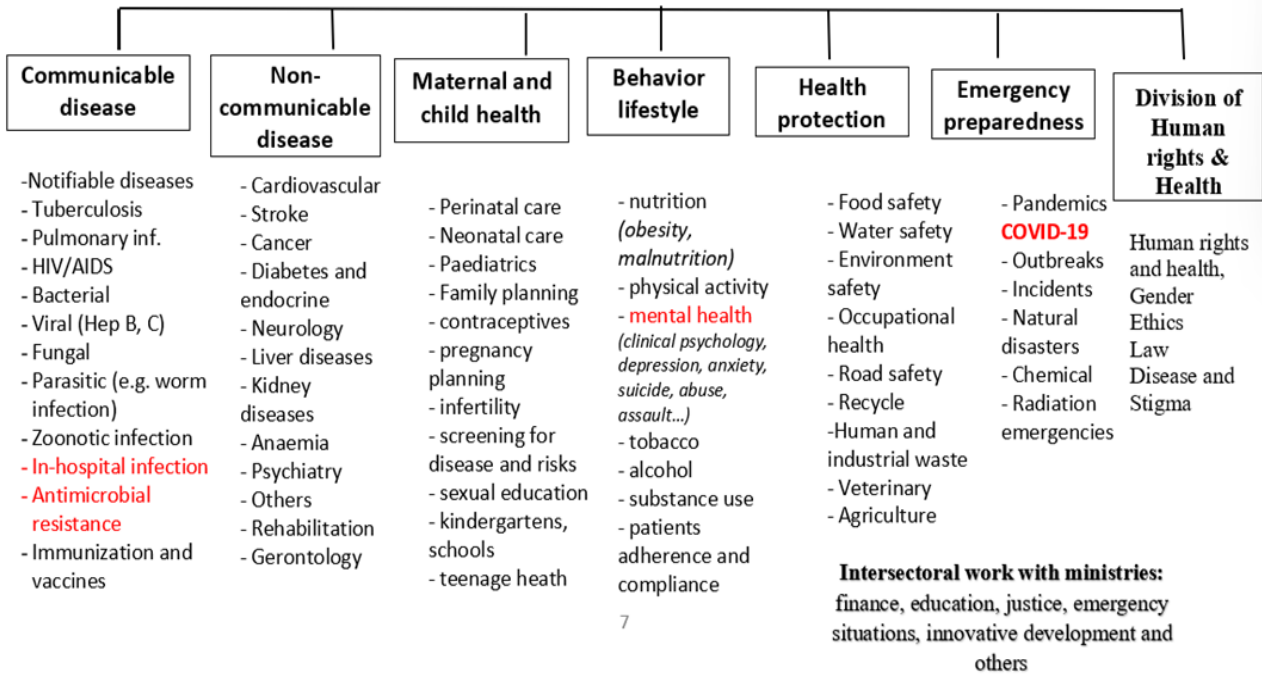
<sup>203</sup> WHO, February 2017. Guidance on testing for hepatitis B and C <https://www.who.int/publications/i/item/9789241549981>

<sup>204</sup> WHO, 2015. Guidelines for the prevention, care and treatment of persons with chronic hepatitis B infection (<https://www.who.int/publications/i/item/9789241549059>)

# Public Health functions and structure



Surveillance and Data Science, Monitoring, Evaluation, Timely action, Prevention risks and diseases, Management, Regulations, Policy and Advocacy, Workforce, Education, Research, Assuring Equity and Quality



## PAPER 8: Governance of the Private Sector

### Introduction

The private sector is a major supplier of health services in the Republic of Uzbekistan, with the Ministry of Health (MoH) estimating that there are 7,320 private health facilities and 42,080 beds – accounting for more than a quarter of the total bed numbers in the country. The private sector has also grown in scale and scope, particularly since 2017 when a Presidential decree expanded the number of services it can legally provide from 50 to 126.<sup>205</sup> As a result, *what the private sector does, for whom, at what cost and levels of quality* have a large impact on the population's health outcomes, and the President's aspiration to ensure universal access to safe, reliable, effective, appropriate and affordable care. To safeguard and improve population health, therefore, the MoH needs to take action to constrain and / or enable the operations of the private sector.<sup>206</sup> Set against this background, the objectives of this report are to: (1) examine *the extent to which current MoH policies and procedures represent an effective and comprehensive response to this goal given the current state of evidence and best international practices* (Section 2: Situation Analysis); and to articulate a series of evidence-based and context-informed *intervention areas* through which the MoH can expand and strengthen its stewardship role in the market (Section 3: Recommendations and Actions).

### Situation analysis

**The current situation.** In-country research conducted over successive missions has revealed a number of challenges with respect to the operation of the private sector in Uzbekistan. These relate to the sector's:

(a) *structure* (as most facilities are small, in terms of the number of beds and staff, and there is significant unrealized potential to achieve economies of scale and scope, and to ensure additional provision in areas in which public sector capacity is limited); and

(b) *performance* (as there are widespread concerns about the lack of accountability - to patients, and to state authorities – resulting in opportunistic behaviors that can compromise the safety, efficacy, appropriateness, and affordability of health care).

The overall result is a private sector that fails to *complement* the operations of the public health sector, leading to competition for technical and financial resources, undermining the capacity of the health system as a whole to address population health needs.

The situation analysis has revealed five key foundational underpinning policy challenges impeding the MoH from carrying out its stewardship role:

The MoH has limited data on *what the private sector does, for whom, on what terms, and at what level of service quality*

Data are unavailable – to the MoH, and to the public - on:

- 1) the volume, range and quality of services provided in the private sector;
- 2) the prices paid by patients, and terms of service; and
- 3) clinical / referral processes, standards, and outcomes.

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<sup>205</sup> Decree of the President of the Republic of Uzbekistan No. PP-2863 of 1 April 2017 "On measures for the further development of the private health sector"

<sup>206</sup> World Health Organization. 2020. *Strategy Report: "Engaging the private health service delivery sector through governance in mixed health systems"*. Geneva: World Health Organization.

These lacunae undermine the ability of the MoH to set plans and policies in an informed way – and in relation to *both the public and the private sector* (e.g., to undertake needs-based planning of public facilities that takes into account the existence of private facilities in the relevant locality). A key underpinning challenge will be to ensure that the private sector reports into the emerging routine health information system. While there is an “understanding” that it will do so, over time, there are no policies or procedures that clearly describe the private sector’s obligations (e.g., through the licensing system), or how and when facilities are expected to report, nor what the consequences for a facility will be if it fails to do so. As such, the private sector’s performance in key areas (e.g., coverage and quality of care; and inputs/outputs of the system) is not fully understood.

The MoH has not set clear ‘rules of the game’, limiting its influence on *private facilities’ operations and performance.*

Currently, controls focus on *ex post* intervention, in the form of (often punitive) sanctions. This focus impedes market development because it creates business risks which are hard to mitigate in practice; and yet fails to guard against opportunistic behaviors that compromise patients’ interests. Currently, facility licensing is the main form of *ex ante* regulation in place.<sup>207</sup> But it focuses on what the private facilities *have* at the time of license issuance – and not what they *do* as providers. Key challenges include the following:

- The process is owned, managed and administered by the MoH and oblasts – but there are only 13 staff (four in the MoH, and nine at oblast level) to set policies and manage over 7,300 facilities, and limited in-house expertise;
- The fee for a license is approximately \$50 – a figure unrelated to the complexity of the services to which the license relates, or the cost of review / approval processes; and
- There is an ongoing ‘moratorium’ on inspections, as a result of which there can be extremely limited government oversight of private sector conduct or performance.

The MoH has significant potential leverage through its purchasing activities – but is not using this strategically.

Leverage exists in the form of:

- It is putting money into the sector (e.g., by purchasing its services to clear waiting lists, provide care for vulnerable populations etc.);
- It will be doing this more systematically in future, e.g., under the state insurance fund; and
- It is providing a range of tax exemptions and other accommodations of benefit to the sector.

International evidence shows that purchasing can be an effective method for influencing important aspects of performance, including: (a) volumes; (b) quality; and (c) prices. Currently, it is not clear that the emerging purchasing arrangements (managed by the state insurance fund) will be used in a strategic way to enhance the development, growth and day-to-day operations of private sector through these impacts. In addition, current ‘spot market’ purchasing of private sector capacity (e.g., for vulnerable patients, and to clear waiting lists) is an inefficient approach which fails to make best use of the state’s buying power to achieve low cost/ high quality service delivery.

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<sup>207</sup> Appendix to the Decree of the Cabinet of Ministers of the Republic of Uzbekistan of June 21, 2017, N 405 “Position on the procedure for licensing medical activities”

*In the absence of a formal process, dialogue, between MoH and the private sector is ad hoc and non-transparent*

There are currently no clear arrangements for *formal policy dialogue* between the MoH and private sector entities. Current forms of dialogue are *ad hoc* and driven by personal connections. As such, they: (a) fail to generate the information the MoH needs to formulate evidence-based policies; (b) build understanding or trust between the MoH and the private sector; or (c) create the means to gain the private sector's support for change or overcome barriers to change. In addition, the ad hoc nature of engagement creates risks to the public interest – creating potential avenues for corruption in the MoH / state capture by specific private interests.

*Current use of PPPs is non-strategic, under-resourced and poses risks to financial sustainability of the health system*

As PPP contracts signed *today* will create a significant call on government budgets *tomorrow* (i.e. once the related facilities, equipment and services are operational and payments to the private sector must be made), their use should be informed by a clear strategic plan for the reconfiguration and modernization of the health estate (the investment decision – whether to invest or not in a given project); *and* how to deliver on this in a way that maximizes value for money and safeguards the future financial sustainability of health systems (the procurement decision – whether to use a PPP or 'conventional' procurement, in which construction / equipping is tendered independently of facilities management / maintenance, and service continue to be provided by the public sector, and funding for capital is provided by government, e.g. in the form of grants or loans to public authorities involved. To address this latter question, there is a large evidence base on the use of health sector PPPs in high-income countries (notably for Australia, Canada, Italy, Portugal, Spain, the United Kingdom and the United States of America).<sup>208</sup>

This evidence demonstrates that:

1. Post-contractual cost overruns tend to be lower under the PPP route than under alternative procurement routes;
2. Standards of maintenance tend to be higher in PPPs, as private operators are well-incentivized to ensure that the buildings and equipment, they manage are available at the standards of operation outlined in the contract (whereas maintenance of 'purely' public sector assets tends to be neglected, especially – but not only - in periods of under-funding);
3. Both transaction costs and financing costs tend to be higher – such that, in financial terms, deficit financing will often be a lower cost option to government compared to the costs of private (PPP) financing;<sup>209</sup> and
4. The obligations created by PPPs for the public sector and other health system stakeholders are "debt-like" – in that they cannot legally be avoided, or adjusted – and the financial sustainability of health systems can be threatened if the opportunity to mobilize private capital and thereby defer the costs of capital investment leads to poor investment decision-making (e.g. investment of the *wrong* scale, and / or investment in the *wrong* capital assets).<sup>210</sup>

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<sup>208</sup> Roehrich JK, Lewis MA, George G. Are public-private partnerships a healthy option? A systematic literature review. *Soc Sci Med.* 2014 Jul;113:110-9. doi: 10.1016/j.socscimed.2014.03.037.

<sup>209</sup> Hellowell M. The price of certainty: Benefits and costs of public-private partnerships for healthcare infrastructure and related services. *Health Services Management Research.* 2016;29(1-2):35-39.

<sup>210</sup> Hellowell, M., and V. Vecchi. 2015. "The Non-Incremental Road to Disaster? A Comparative Policy Analysis of Agency Problems in the Commissioning of Infrastructure Projects in the UK and Italy." *Journal of Comparative Policy Analysis: Research and Practice*, 17 (5); 519–532.

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**Box 1. Focusing on specific models of PPP in use in Uzbekistan**

**Model 1: Specialist services PPPs**, focused on the financing, construction, equipping, training and ongoing management of specialized clinical/diagnostic centers (e.g., three hemodialysis centers in Tashkent City, Karakalpakstan and Khorezm; three radiotherapy centers). PPPs of this form can in principle enhance the scope and quality of specialist medical infrastructure, equipment and services that are available to the general population, e.g., when relevant capacity is lacking in the public sector, and cannot easily be established in the required timeframe. However, to safeguard *allocative efficiency* there should be detailed assessment of the net benefits of allocating additional public funds to the service areas to be targeted, compared to alternatives. There is a danger that additional spending on relatively low-value, high-tech services will erode fiscal space for additional low-tech, high-value services (e.g., relating to chronic conditions such as asthma, diabetes, hypertension, etc) at the expense of allocative efficiency. In addition, in terms of value for money, the opportunity costs of procurement through Model 1 PPPs should be compared to alternative procurement routes (e.g., direct public sector investment and service provision, or more ‘routinised’ contracting arrangements administered by a social/national health insurance agency or governmental purchaser). While quantitative data is absent, international experience (e.g., in Romania, Moldova and Kyrgyzstan) suggest that Model 1 PPPs are associated with higher transaction costs and/or per capita/per session prices than these alternative forms of provisioning.<sup>211</sup>

**Model 2: Health facility PPPs**, focused on consolidation of monoprofile and outdated hospital facilities into multispecialty facilities (i.e., general hospitals) (e.g., the proposed multi-profile hospital in Fergana region). Use of Model 2 is often driven by the “superficial” benefits of private financing – i.e., its apparent ability to *defer* and *smooth out* the costs of capital projects.<sup>212</sup> However, this feature of the model can lead to the *overcommitment* of future public budgets by, for example, entering into contracts that in the long term prove to be unaffordable for the public sector. Such an outcome may be driven by a combination of *technical errors* (related to the inherent difficulty of predicting the future), *optimism bias* (a non-deliberate tendency to underestimate costs/overestimate capacity to bear costs) or *strategic misrepresentation* (a deliberate effort to underestimate costs or overestimate future budgets). Whatever the cause, the international evidence shows that such errors have real, and lasting, consequences for health systems. In the absence of such errors, the model can generate good value for money, *given certain conditions* – for example, if the authority is able to generate strong competition in procurement, specify its requirements in a clear and operational manner, and verify (through monitoring of performance against the contract terms) that the operator is meeting the authority’s requirements. Where these things are not possible, or are not achieved, value for money will be undermined.<sup>7</sup>

*Source: Hellowell, M (2022), Public–private partnerships for health-care infrastructure and services: policy considerations for middle-income countries in Europe. Barcelona: World Health Organization (forthcoming).*

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<sup>211</sup> See: Hellowell, M (2022), Public–private partnerships for health-care infrastructure and services: policy considerations for middle-income countries in Europe. Barcelona: World Health Organization (forthcoming).

<sup>212</sup> In the Fergana case, affordability constraints may be eased by the use of public concessional financing, to be sourced from an IFI such as the World Bank, and grants, to cover part of the capital expenditure requirement through payment from the government to the PPP partner at defined milestones during construction. In this case, the remainder (50-60percent) will be financed by the private sector. As this form of “hybrid PPP” is relatively new, there is no robust evidence base to assess its potential effects on financial sustainability / value for money from the PPP model. However, it seems reasonable to assume that affordability pressures related to hybrid PPPs may be less than those relating to conventional PPPs – though that does not reduce the importance of maintaining a clear focus on long-term affordability and supporting that focus via routine utilization of independent scrutiny and challenge.

PPPs can generate a significant call on the future revenues of national and local health systems – for example, the proposed multi-profile hospital in Fergana region has an estimated capital value of US\$125-150m; and will generate ongoing public sector costs of \$18-24m per annum. The effect of using private finance to deliver new facilities is to *defer and smooth out* the costs of infrastructure procurement but it does not eliminate such costs. Indeed, the *deferral / smoothing out* of costs can create perverse incentives within public authorities to over-invest, entering into contracts that are too large or too costly, and may become unaffordable for the local health system over time. In Uzbekistan, the adoption and deployment of PPPs has, to date, been **non-strategic** (the MoH doesn't have a clear needs-based assessment of investment priorities to which PPPs can respond; and instead, MoH staff are expected to realize a certain number of signed PPP contracts); **and under-resourced** (specialist human resources required to plan, design, negotiate and monitor long-term and complex contracts are limited, albeit supported by technical assistance from the IFC).

### **Recommendations and actions**

**A vision of the future.** The government of the Republic aims to improve population health through enhanced access to safe, reliable, effective, appropriate and affordable care for the whole population.<sup>213</sup> Through the National Health System Strategy, the MoH will act to improve the *structure and performance* of the private sector in pursuit of this aim. The outcome will be a private health sector that *complements* (rather than *competes with*) the public health sector, provides additionality in deployment of technical and financial resources, strengthening the capacity of the health system *as a whole* to address population health needs.

### **TO REALISE THIS VISION, THE MOH NEEDS TO EXPAND AND STRENGTHEN ITS STEWARDSHIP ROLE**

To be an effective “steward” of population health, and to accelerate progress towards universal health coverage, the MoH must use a fuller range of regulatory, financing, and mobilization capabilities, and to:

- Ensure it has the information and intelligence it needs to monitor activity across the health system, including its public and private components, and set policy accordingly;
- Exert strong influence on the development and growth of the private sector, and on its day-to-day conduct and performance, to create an incentive and accountability regime that is pro-efficiency, pro-access and pro-quality;
- Engage the private sector in formalized and transparent policy dialogue – to *support, shape, inform and enable* the sector's contribution to policy goals, including the implementation of this *Strategy*; and
- Take the lead in ensuring that purchasing arrangements in general, and for public private partnerships in particular, aligns with MoH investment / service delivery priorities.

**The following five (5) recommendations relate directly to the underpinning objectives outlined above.**

#### **Integrate private health facilities / providers into the routine health information systems (1)**

The MoH needs to build a national health information system that provides clear and accurate insights into the capacity and performance of the health system (public and private) in terms of the distribution, quantity, and quality of health products and services and the extent of progress against health system

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<sup>213</sup> Decree of the President of the Republic of Uzbekistan No. UP-5590 of December 7, 2018 “About complex measures for radical enhancement of health care system of the Republic of Uzbekistan”

targets. The private sector needs to be integrated into this emerging system – in a step-by-step manner. This means: confirming that existing “census” data on private facilities is complete; addressing any gaps; and ensuring the integration of the private sector into the emerging health information system, ensuring it reports on indicators of core policy-relevance (i.e. coverage and quality of care; inputs / outputs of all facilities; and morbidity/mortality etc.).

**Specific actions:**

- ✓ Ensure that the Master Facility List (or equivalent) of the Republic includes all current information on private facilities’ / providers’ locations and scope of services. Collect additional facility / provider data if necessary (e.g. through a census).<sup>214</sup>
- ✓ tax offices will on a quarterly basis provide the MoH with specified information on the types, volumes and prices of medical services provided in the private sector.
- ✓ Create national policies and procedures for integrating private facilities / providers into routine data collection systems, beginning with core indicators (coverage and quality of care; inputs / outputs of the system; and morbidity / mortality).<sup>215</sup> In particular, strengthen the facility licensing regime to require private clinics to report on core indicators (as outlined above and in accompanying WHO guidance)<sup>6</sup> as a condition of license issuance and maintenance (for new applicants and periodic renewals).
- ✓ Ensure all data / related analytical outputs are shared with the independent health services regulator (see below) to enable continuous monitoring of service quality for individual health facilities / providers and private sector as a whole.

**Introduce independent regulation of private facilities / providers (2)**

MoH capacity needs to be strengthened so that it can perform basic registration of new facilities/ re-registration of existing facilities and, over time, undertake more complex tasks – including ongoing monitoring and periodic inspections of facilities / providers. Given existing MoH funding and staffing constraints, which make it difficult to expand the human resources required to perform this range of functions, the MoH needs to establish an independent regulator for licensing / related monitoring and inspections activities.

**Specific actions:**

- ✓ Establish an Independent Regulator for Health Services. Its initial scope of work will focus on the licensing, monitoring and inspection of private facilities / providers in the Republic. However, its remit should extend to cover all public facilities / providers over the timeframe of the Strategy – to 2030).
- ✓ Give the regulator the power / duty to undertake ongoing monitoring and periodic inspections of facilities / providers (with a focus on the safety and effectiveness of services provided).
- ✓ Confer on the regulator the power to set license fees according to a published schedule that reflects the actual costs of the licensing process (including registration, and initial inspections).
- ✓ Confer on the regulator the power / duty to engage specialist clinicians and other experts to (i) advise on / define key lines of enquiry (covering the equipment and staffing levels, and the safety and effectiveness of the care provided), related indicators, for inspections, and (ii) conduct inspections.
- ✓ Introduce procedures to ensure (i) that inspectors do not encourage improper inducements from facilities / providers by creating delays, service disruptions and / or refusing licenses without grounds; and (ii) that facilities / providers do not offer bribes in order to pass an inspection without having the met requirements.

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<sup>214</sup> World Health Organization (2019), Master facility list resource package: guidance for countries wanting to strengthen their master facility list: facilitator guide for the MFL training. World Health Organization. Available: <https://www.who.int/publications/i/item/9789241516495>

<sup>215</sup> World Health Organization (2021), Toolkit for analysis and use of routine health facility data: Core health facility indicators. Available: [https://cdn.who.int/media/docs/default-source/world-health-data-platform/rhis-modules/facilityanalysisguidance-indicators-2021--01-21.pdf?sfvrsn=76b0be9b\\_5](https://cdn.who.int/media/docs/default-source/world-health-data-platform/rhis-modules/facilityanalysisguidance-indicators-2021--01-21.pdf?sfvrsn=76b0be9b_5)

### **Introduce a strategic framework for government purchasing of private sector capacity (3)**

The MoH needs to move from a situation in which it is paying to harness private sector resources in the 'spot market' to a systematic approach that better leverages public sector market power, providing greater stability for the public health sector and reducing risk for the private sector, and better value for money. The MoH / oblasts should assess the public sector's capacity to deliver all services covered under the State Guaranteed Benefit Package on a universal basis over the timeframe of the Strategy (-to 2030); and use the private sector to address these gaps directly (by introducing service contracts, and / or allowing patients to "choose" to receive specified services from private providers).<sup>216</sup> It should leverage international experience and guidance to introduce a rolling program of 3-5 year contracts with qualified private facilities / providers to address identified capacity gaps in the public sector.

#### **Specific actions:**

- ✓ The MoH / oblasts will assess the public sector's capacity to deliver all services covered under the State Guaranteed Benefit Package on a universal basis over the timeframe of the Strategy (-to 2030).
- ✓ The MoH / oblasts will (i) examine the impacts of current "spot market" purchasing arrangements, and (ii) introduce a rolling program of 3-5 year contracts with qualified private facilities / providers to address identified capacity gaps, to which state-insured patients will have access on the same terms as in equivalent public sector facilities.
- ✓ Introduce policies and procedures to safeguard "additionality", fiscal sustainability and service quality under the new contracting arrangements.

### **Establish a platform for recurrent policy dialogue between the MoH/ oblast health authorities and the private sector (4)**

The MoH needs to build a policy dialogue platform for consulting with / engaging credible private sector interlocutors in the policy process – and in a routine manner. It should use this platform to:

- (a) generate the intelligence that the MoH needs to formulate evidence-based policies, including in the policy areas related to the implementation of the National Health Strategy;
- (b) build understanding and trust between the MoH and the private sector;
- (c) create the means to gain the private sector's support for change / overcome barriers to change; and
- (d) safeguard the public interest in the policy-making process (disrupting avenues for corruption and other adverse behaviors).

There are two key options for doing this:

- 1) Leverage existing dialogue structures; or
- 2) Create new structures

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<sup>216</sup> The MoH may consider both "availability-based" contracts, in which the private sector receives a global budget for a capped number of treatment episodes (in which case, "patients follow the money"), or "usage-based" contracts, in which the private sector receives a fixed fee per episode, with the total number of episodes determined by patient demand (in which case, "money follows the patient"). The former option reduces demand risk for the private sector - and thus facilitates market development. The latter option increases demand risk for the private sector – but facilitates patient choice. In practice, most countries begin

In either case, it will be important to (a) identify, recognize and strategically engage with / and look to strengthen credible interlocutors (private doctors' association); and (b) ensure transparency – publish membership, circulate meeting minutes, establish openness with CSOs, patient groups, media.

An example of a policy issue that requires a formal process is “dual practice” – how to manage this. ‘Banning’ dual practice would lead to unintended negative effects, but there is, nonetheless, a legitimate public interest in regulating this phenomenon.

**Specific actions:**

- ✓ Identify credible private sector / professional representative bodies and invite them (e.g., via a letter from the President or Minister of Health), to enter into dialogue with the MoH / other state health agencies on a recurrent basis.
- ✓ Organize a schedule of meetings based on core policy priorities – enabling consultation on key forthcoming reforms (i.e., changes to data collection arrangements, regulations, purchasing and PPPs).
- ✓ Consider requirements for the platform’s institutionalization: i.e., is a new decree or regulatory mandate required; or will a memorandum of understanding between the MoH and each interlocuter be sufficient?
- ✓ Develop and agree with the identified interlocuters new procedures to ensure transparency – i.e., on membership, meeting agendas, agreed actions etc.

**Embed the use of PPPs in a strategic ‘master-plan’ for investment in health care infrastructure (5)**

The MoH needs to view PPPs as a “tool” or “instrument” that it can use to advance its strategic objectives. That means having clear objectives in relation to future health care needs and the infrastructure required to achieve them. Specific targets to realize a given number of PPP transactions in each period – such as those currently in place in the MoH - should be discontinued. The MoH needs to recognize that PPP contracts signed *today* create a call on public budgets *tomorrow* (i.e., once the related facilities, equipment and services are in operation), and that their use should therefore be informed by clear prioritization criteria - addressing the following:

- 1) what services should be provided in the public sector,
- 2) in what tiers of the health care system (e.g., primary, secondary, or tertiary care) they should be provided,
- 3) what reconfiguration of the health-care estate is needed to realise this; and
- 4) what capital investments are needed to deliver the desired reconfiguration of the health estate (**the investment decision**).

Only once the investment decision is concluded can an evidence-based **procurement route decision** be made. In turn, that decision should focus on how the investments can be realized in a way that maximizes value for money while safeguarding financial sustainability for the local health system as a whole. This means ensuring that there is independent scrutiny and challenge for all PPP investments. In large-scale use of PPPs in the health sector is to be considered, processes of independent scrutiny and challenge may be supported by the application of an overall “control total” and related procedures for each oblast, following the example of the United Kingdom.<sup>217</sup> The “control total” acts as a defined limit to the total value of all future PPP liabilities that can be entered into in a given period by an authority - and is, in effect, an attempt to establish an overall PPP budget. Such a budget may also help to stimulate a transition from medium-term to long-term budget-planning and more disciplined prioritization of capital investments.

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<sup>217</sup> See: National Audit Office (2018), PFI and PF2, Report by the Comptroller and Auditor General, Available at: <https://www.nao.org.uk/wp-content/uploads/2018/01/PFI-and-PF2.pdf>

Embedding the use of PPPs in a strategic 'master-plan' for investment in health care infrastructure will require strong capacity within government to undertake rigorous needs-based capital planning to underpin investment decisions, and to inform procurement decisions. Where decisions of the latter form find in favor of the PPP option, capacity is required to support health authorities in *running competitive procurements, designing effective contracts and establishing structures assiduous monitoring of performance*. Without such capacities in place, PPPs will not deliver benefits in respect of risk transfer, sufficient to offset the model's higher transaction costs and finance costs. Further, as noted, such capacities should be complemented by robust institutional checks and balances to ensure transparency in decision-making, minimize long-term fiscal risks, and maintain the integrity of procurement processes. Currently, MoH capacity in all three of these critical areas is extremely limited and will need to be strengthened.

**Specific actions:**

- ✓ The MoH should collaborate with oblast health authorities to develop a masterplan for the (re-) configuration of the health infrastructure of the country; and draw on this to develop clear criteria for the selection of capital investment projects.
- ✓ Consider on the basis of strict value for money and financial analysis (as defined in the current PPP legal framework) which, if any, procurements in the defined programme can / should be taken forward as PPPs.
- ✓ Establish procedures for independent scrutiny of projects, with a focus on long-term costs and the affordability of those costs and / or their potential impacts on the financial sustainability of the relevant health economies - supporting this with an overall a "control total", for each Oblast, expressed as the percentage of future annual budgets that can be earmarked for the recurrent costs of PPP contracts.

SUMMARY OF CHALLENGES AND RECOMMENDATIONS FOR GOVERNANCE OF THE PRIVATE SECTOR

BIG PICTURE		
	<p><b>THE MOH NEEDS TO BECOME AN EFFECTIVE ‘STEWARD’ OF THE ENTIRE HEALTH MARKET SYSTEM</b></p> <ul style="list-style-type: none"> <li>• Ensuring it knows what is happening across the ‘mixed’ health system;</li> <li>• Exerting strong pro-efficiency/ pro-quality/ pro-equity influence on the development and growth of the private sector, and on its day-to-day operations and practices;</li> <li>• Engaging the private sector in policy dialogue through effective and transparent processes – to support, shape, inform and enable its contribution to policy goals; and</li> <li>• Making much more effective and strategic use of public private partnerships.</li> </ul> <p>With these attributes, the MoH will be in a better position to respond to five key challenges, below.</p>	
	<b>CHALLENGES</b>	<b>RECOMMENDATIONS for REFORM</b>
1	<p><u>Government has no data on what the private sector does, for whom, on what terms, or level of quality.</u> This is because the private sector is not reporting into the health information system – and there are no clear policies that require / enable it to do so in the future.</p>	<p>Confirm that existing data on private health facilities is complete. Collect new data if there are gaps. Accelerate the integration of the private sector into the health information system, ensuring it reports on indicators of key policy-relevance (coverage and quality of care; inputs / outputs of the system; and morbidity / mortality etc).</p>
2	<p><u>There is no <i>ex ante</i> regulation through which MoH exerts influence on the private sector.</u> There are no clear ‘rules of the game.’ There is, however, <i>ex post</i> regulation – in the form of (often punitive) sanctions for adverse events. This combination impedes market development without providing MoH controls on conduct and performance.</p>	<p>Create a more comprehensive and effective regulatory apparatus, and the institutions required to achieve this. This requires strengthening capacity – requiring a new independent regulator that has the resources go beyond the registration of facilities and to undertake recurrent monitoring and periodic inspection of private facilities.</p>
3	<p><u>The MoH has significant leverage – but is not using this currently to advance its policy goals.</u> Purchasing arrangements are not being used to create a more appropriate incentive and accountability environment for private sector operations paid for by public funds.</p>	<p>End ad hoc ‘spot market’ purchasing of private sector capacity. Be systematic, focus on prioritized, build a program. Make better use of the state’s considerable market power to exert downward pressure on prices and upward pressure on the quality of services provided.</p>
4	<p><u>In the absence of a formal process for policy dialogue, communication between MoH and private sector are ineffective and non-transparent.</u> Existing arrangements do not generate the data needed for policy, mobilize support for reform, or safeguard the public interest.</p>	<p>Establish formal arrangements for dialogue. Identify, recognize and engage with credible interlocutors, develop mutually accountable and transparent arrangements, and publish / circulate membership, meeting minutes to CSOs, patient groups, and the media.</p>
5	<p><u>Current use of PPPs is non-strategic.</u> Projects are not selected based on needs. Therefore, PPPs are being deployed as ‘a strategy, not a tool’ – which poses risks to both allocative efficiency and budgetary sustainability.</p>	<p>Develop a capital investment policy for the health sector of the Republic of Uzbekistan. Build capacity in needs-based planning. Start with investment prioritised; then consider the role of PPPs in delivering them. Take action to ensure that the use of PPPs does not threaten the fiscal sustainability of the health system at national / oblast levels.</p>

## PAPER 9: Demonstrating practical impacts of the Strategy on service delivery at primary care

### Introduction

The *National Health System Strategy for Uzbekistan* outlines a series of reforms that would transform the performance of the health system in terms of *quality of care, operational efficiency, access to care, health workers' work-life balance, and service coverage*. The rationale for, and intended impacts of, *the Strategy* are illustrated in this report through an examination of the practical impacts that they would generate for service delivery at the district level (which is, in Uzbekistan, considered to be the primary care level).<sup>218</sup> Accordingly, this report outlines therefore the Strategy's impacts on a representative district health system ("*District X*"), in which service delivery comprises a network of family medicine polyclinics, a multispecialty polyclinic, and a district general hospital.

The data for this analysis has been drawn from a sample of real (anonymized) district-level health systems – selected in a purposeful way to represent the structural characteristics of, and operational challenges faced by, the full population of 208 district health systems in Uzbekistan. District health systems can be considered the 'backbone' of the wider health system – as they account for approximately 74 percent of inpatient and 97 percent of outpatient services provided in the public sector.<sup>219</sup>

The report begins by outlining the *Current Picture* of the "*District X*" health system, focusing on the main operational challenges it faces at the time of writing; and then proceeds to outline the *Future Picture*, showing how the reforms set out in the Strategy would address these challenges - and, in doing so, generate real, concrete, progressive changes to service delivery in *District X*. Further, in the annex to the report, the series of system-level reforms proposed in *the Strategy* that will underpin and sustain the outlined changes at the district-level are briefly defined.

At the district level, the targeted areas for improvement are as follows:

1. To improve **access to care and health workers' work-life balance** by addressing the shortage of physicians;
2. To improve **quality of care** by addressing inadequate physician and nurse competencies to deliver care that meets international standards;
3. To improve **quality of care and access and coverage** by addressing inadequate availability of essential inputs (medicines and diagnostics);
4. To improve **organizational efficiencies** by addressing inefficiencies in workforce distribution, the procurement of medicines and consumables, and service delivery; and
5. To foster improvements in **all domains** by addressing the lack of data and systems to monitor performance.

Table 1 outlines the logical connections between the main operational challenges faced by health care managers in *District X*, their underpinning causes, and how the solutions outlined in the Strategy would address these.

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<sup>218</sup> In Uzbekistan, district-level health care is the health system's primary care level, even though it includes some specialist outpatient facilities and general hospitals. At the district level, most health services are (or should be) made available to the population at zero or low cost.

<sup>219</sup> Two districts in one region were visited to collect administrative data, including financial, clinical, and administrative records, and qualitative data, including virtual and in-person key informant interviews, and in-person site visits. In addition, reporting forms have been reviewed for other districts in a number of regions to validate the representativeness of the data from the sampled districts.

**Table 1. Summary of the operational challenges, underpinning causes and solutions in the Strategy**

Challenges	Causes	Solutions proposed in <i>the Strategy</i>
1. The number of physicians available is inadequate to meet the district population's need for health care ( <b>access and work-life balance</b> ).	1(a) Health facilities at the district level are unable to recruit and retain an adequate complement of physicians.	The Strategy will improve recruitment and retention of physicians at the family medicine level by enabling the introduction of more attractive physician salaries at this level, alongside enhanced career and training opportunities.
2. Physician and nurse competencies are inadequate, and, thus, the delivery of health care at the district level fails to meet international standards ( <b>quality of care</b> ).	2(a) Lack of training – both pre-service (education) and in-service training are inadequate to provide health care that meets international standards.	The Strategy will establish rigorous in-service training based on international evidence. For family medicine physicians and nurses, this will focus on the diagnosis and treatment of 20 priority conditions (accounting for an estimated 40% of primary care visits). For hospital physicians and nurses, training will focus on the diagnosis and treatment of 10 priority conditions (accounting for an estimated 70% of hospitalizations). At both levels, training will include mentoring by internationally licensed physicians / nurses.  In addition, the Strategy will strengthen the systems of physician and nursing education, ensuring that incoming health workers have the clinical skills required for diagnosis and treatment of these prioritized conditions from the onset of their professional lives.
	2(b) Care quality monitoring and reporting are inadequate, and clinical protocols for key conditions are not defined in documentation.	Care quality monitoring and reporting will be introduced through the implementation of structured disease / service-specific documentation (including clinical flowsheets and order sets) for the 20 prioritized outpatient / 10 inpatient conditions.
3. The availability of key inputs (essential medicines and diagnostics) at the family medicine level is seriously inadequate ( <b>quality of care</b> ).	3(a) Shortage of funds leads to unreliable availability of tests and medicines essential for high-quality care, alongside a lack of coverage for patients, resulting in high out-of-pocket payments.	By re-prioritizing government health expenditure to expand availability of inputs at the family medicine level, the Strategy will ensure uninterrupted availability of the essential medicines and diagnostic tests – focusing on those that are, according to international guidelines, required to manage prioritized conditions.  In addition, the Strategy will improve availability of essential inputs in a stepwise approach in parallel with strengthening of in-service training (see above). In Year 1, prenatal care, family planning, pregnancy testing and three chronic conditions (hypertension, diabetes, and coronary artery disease), prioritized for competency training, will

		be prioritized for improved availability of medicines and tests necessary to ensure truly high-quality care. In subsequent years, availability will expand to include other priority conditions for family medicine and hospital care at the district hospital level.
4. The organization of service delivery is inefficient ( <b>efficiency, quality of care, work-life balance</b> )	4(a) The distribution of physicians is inefficient – being skewed towards specialist and ambulance services in the district health system.	The Strategy will ensure a more efficient distribution of human resources through integration of inpatient and outpatient specialty services, and task shifting to paramedics and triaging centers.
	4(b) There is limited task shifting to nurses, who still play a mostly ‘assistive role’ to physicians, such that physicians are spending too much time on simple clinical / administrative tasks.	The Strategy will strengthen the quality of care and reduce costs by implementing new patient care pathways (enforcing clearly delineated referral pathways) and clinical care models (enhancing the role of nurses). To enable safe task-shifting to nurses, rigorous in-service training will be undertaken in a phased approach, focusing on 20 prioritized conditions for family medicine clinics, and 10 prioritized conditions for district hospitals (see below).
	4(c) Diagnostic capacity is fragmented across multiple care settings, creating diseconomies of scale / scope and undermining the quality and reliability of diagnostic testing.	Laboratory testing capacity will be centralized at the district hospital, except for point-of-care testing, which will continue to be available within each health facility. Other diagnostic and radiology services will be centralized at the district level.
	4(d) Care pathways and models for conditions are misaligned with current evidence-based practice, driving inappropriate hospitalizations	Care pathways and models for conditions driving inappropriate hospitalizations will be developed / updated, focusing on the conditions that drive inappropriate hospitalizations.
5. Health authorities have limited ability to monitor and improve performance	5(a) There is no robust performance monitoring system. Currently, all data collection and information exchange are paper-based and reliant on Microsoft Word or Excel for summative reporting. Availability of computers and local area or Wi-Fi networks is limited to administrative offices.	Improvements in this target area will be achieved through implementation of: patient management software to collect administrative data; software solutions for immunization, family planning, patient education, outpatient medicine dispensing, and referral from family medicine physician to specialist; flowsheets and order sets for priority conditions (paper-based and electronic); and a new data warehouse and analytics that will integrate data from all health information systems, including from the ambulance care level.

**The Current Picture – a situation analysis of the “District X” health system**

*District X* has a population of 170,000 people, as of 2022. On the supply side, in common with other districts in the country, the public sector health system is comprised of the following:

- One district general hospital with a total bed capacity of 345;
- One multi-specialty polyclinic;
- Three family medicine polyclinics; and
- Seven family medicine points.

In the rest of this section, the main “problems” facing health care managers in District X and their root causes are described and explained.

**Problem 1. The number of physicians available is inadequate to meet the district population’s need for health care**

*District X* is unable to recruit and retain an adequate complement of physicians, undermining service coverage; and thus, the capacity of the local health system as defined by local staffing norms is insufficient to meet local health needs; and the workloads of incumbent physicians are unmanageable. The evaluation team has heard from district health authorities of the major difficulties in recruiting and retaining physicians. As Table 2 shows, almost half of physician positions (created according to national staffing norms and funded from the state budget) are not fully staffed – i.e., they are either unoccupied, or shared, and the majority of physicians hold almost two jobs.

**Table 2.** Numbers of physician and nurse positions, filled positions, and individuals employed, in *District X*

	Physicians	Nurses
<b>Number of positions</b>	420	940
<b>Filled positions</b>	370 (88% of positions occupied)	935 (99% position occupancy)
<b>Individuals employed</b>	210 (1.7 positions per individual)	1,324 (0.7 positions per individual)

As a result of this shortfall in the physician workforce and the high workload at the district level, many patients will be unable to access the care they need or receive appropriate care, close to where they live, and in a timely manner. Other patients may be able to obtain such care – but only by securing a referral (or self-referral) to other levels of care in the public sector or private sector providers, in which:

- (a) health care is on average far more expensive, in terms of the average cost of service provision, than is the case at the district (especially, family medicine) level; and
- (b) patients are likely to be exposed to high out-of-pocket payments – and, thus, to potentially catastrophic or impoverishing direct costs.

As the situation analyses outlined in the *Background Papers* make clear, the lack of physicians at the district level care nationwide is driven by low salaries, which also forces physicians to have more than one full-time job impacting their work-life balance. Currently:

- the starting salary of a physician in a family medicine point or polyclinic is approximately US\$ 240 per month (i.e., this is the funding available for one full-time position); and
- the salary for a physician with 15 years of uninterrupted work in the public sector (and higher qualification grades assigned by the MoH) can increase this starting salary, but by no more than 40%.

By way of comparison, qualitative research indicates that, in the private sector, salaries for competent non-surgical specialty physicians are higher than US\$ 2,000 per month in Tashkent and major cities, and US\$ 700-1,000 per month in the rest of the country, while starting salaries of US\$500-600 are typical in both settings.

**Problem 2. Physician and nurse competencies are inadequate, and, thus, the delivery of health care at the distinct level fails to meet international standards**

This problem has two main causes, as follows.

**First**, physician and nurse competencies are limited due to a lack of training. Both pre-service (basic medical and nursing education) and in-service training are inadequate to provide care that meets international standards. While accurate measurement of clinical quality at the primary care level is challenging in the absence of reliable quantitative quality-of-care data, site visits undertaken by the World Bank team as part of a situation analysis conducted in support of *the Strategy* and a recent evaluation of new health financing, service delivery and e-health arrangements in the Syrdarya region have shown that the clinical competencies available in a district health system are inadequate.

Inadequate competencies available in family doctor points and family medicine polyclinics undermine the quality of care available to local communities and contribute to the routine bypassing of primary care facilities by patients, and to a tendency to over-refer patients to higher-tier facilities by physicians. For example, site visits have confirmed that conditions that should be managed at the family medicine level (e.g., management of hypertension, diabetes, coronary artery diseases, and other common conditions) are often referred to a district multi-specialty polyclinic specialists and even inpatient facilities, at the district and regional levels, largely because family medicine physicians (and, often, specialists at multi-specialty polyclinics) lack basic competencies in the effective management of these conditions. Many of the family medicine referrals to specialist physicians that were observed during the evaluations would not occur in the Organisation for Economic Co-operation and Development (OECD) countries, where well-trained physicians would be expected to manage the related conditions in family medicine centers or equivalent facilities.

In addition, the clinical competencies available in district hospitals and multi-specialty polyclinics are also inadequate. Observations at both outpatient and inpatient facilities at the district level indicate that the care offered is often substandard, not evidence-based, and excessively focused on treatment by medication, rather than on accurate diagnosis and patient counseling. One result of this is that even basic clinical conditions are being routinely referred to regional and private sector specialist facilities that could more appropriately be managed at the district hospital level. It is possible that some of the excessive referrals and the excessive pharmacologic therapy are driven by patient expectations and demands. A defensive approach to hospitalizations – induced, for instance, by fear of formal complaints by patients – is apparent among physicians at the district level, and, thus, the incentive to do what the patient wants, rather than what evidence-based medicine requires, is driving inappropriate clinical and referral decisions.

**Second**, care quality monitoring and reporting are inadequate, and solutions for this are undefined in clinical documentation. One cause of low-quality care is the low volume of complex procedures provided at the district hospital. Performing such interventions at such a low volume undermines clinical quality and, indeed, poses risks to patient safety, as physicians will be unable to develop / retain the skills necessary to effectively perform such procedures. For example, in recent years, complex surgeries such as the removal of the uterus, or a section of the stomach, have been performed at the district hospital, at volumes of just one or two procedures per year.

**Problem 3. Inadequate availability of key inputs (essential medicines and diagnostics) at the family medicine level**

Shortage of funds at the family medicine level leads to unreliable availability of essential inputs.

The range of laboratory testing is limited, and even that limited range is not always available due to a frequent shortage of funds. Though the most basic laboratory services, such as comprehensive blood count and urine analysis, are reliably available, more advanced second-level tests often are not. For example, essential tests for managing and monitoring diabetes, such as the hemoglobin A1C test, or other common tests used in family medicine, such as serum electrolytes or thyroid hormones, are not routinely available.

While access in family medicine clinics to starter-dose medications (comprised of a list of 120 essential medications) appears adequate, full medication coverage for chronic conditions has not been achieved. Providing free medication as a starter dose for chronic conditions is helpful, but the likelihood of continuing with the medications beyond the starter dose diminishes steeply since patients are required to pay out of pocket.

Limited access to medicines, essential laboratory tests, and diagnostic procedures eventually leads to subpar care and more referrals, independent of inappropriate competencies of workforce. Of note is that approximately five percent of the total annual budget in District X is spent on medicines and consumables.

**Problem 4. The organizational efficiency of the district health system is low**

There are four major underpinning causes of organizational inefficiency in the District X health system.

**First**, the distribution of physicians across health care settings is highly inefficient – skewed towards specialist and ambulance services (Table 2). For example, the number of physician positions in the district ambulance service is larger than the number at the district hospital’s non-emergency units. This indicates an overreliance on physicians in settings in which services can be effectively provided by well-trained (non-physician) health workers. In addition, over-staffing of the multi-specialty polyclinic with specialists – who contribute little to family medicine, or hospital care – is concerning, and indicative of a lack of proper human resource planning. One consequence of overstaffing at this level is that the workload for many specialists is extremely low, even in the context of observed patient preferences for, and self-referrals to, their services. Hence, in the first six months of 2022, daily patient visits to pulmonologists, rheumatologists, tuberculosis specialists, neurologists, and oncologists in the district multi-specialty polyclinic were, respectively, 13, 10, 6, 11, and 8 – far too low to justify current staffing levels.

**Table 3** Physician full-time staff equivalent positions by selective district health system components

	General hospital (non-emergency units)	General hospital (emergency units)	General hospital (maternity unit)	Ambulance	Multi-specialty polyclinic	Family medicine
Full-time staff equivalent positions	60	38	23	66	100	106

**Second**, there is limited task shifting to nurses / coordination across clinical settings, such that nurses still play a mostly ‘assistive role’ to physicians. The newly updated norms of a family medicine physician

position per panel size of 2,000 population as well as the share of family medicine physicians in the total pool of physicians in the district are quite reasonable by international standards. However, this set up is reasonable only when a substantial share of chronic ( $\approx 60\%$ ) and preventive care ( $\approx 80\%$ ) is delegated to non-family medicine physicians or non-physician staff.<sup>220</sup> The updated state-financed nursing (3) and midwifery (0.5) positions per panel size are adequate in terms of numbers, but nursing competencies are not yet at the level required to enable them to take over even simple clinical tasks. Even after the updated staffing norms, nurses continue to play a very limited role in chronic care and other forms of preventive care. Importantly, at the district level, there appear to be no near-term evidence-informed specific plans on task shifting to nurses, including no priority list of responsibilities to be delegated, which further undermines key concepts underlying new staffing norms. The limited task shifting is inconsistent with recent international evidence, which demonstrates that task shifting within multi-disciplinary teams can reduce costs and enhance quality of care, with no negative impact on health outcomes.<sup>221</sup>

Overall, these organizational inefficiencies prompt people to seek care from emergency and ambulance services, where care is costly and not comprehensive and continuous. For example, the total number of ambulance calls (crew dispatches) in the first six months of 2022 in the district was approximately 46,000 or close to 50 calls per 100 population when annualized, of which only 5 percent were hospitalized. This represents a very high utilization pattern given the population demographics and burden of diseases, with ambulance services becoming expensive home-based symptom-driven care that substitutes for a proper comprehensive continuous care service at a family medicine clinic. As a reference point, the ambulance utilization rates in *District X* are twice, and hospitalizations *about one tenth of*, the rates in England, respectively, which has a strong primary care system and a much higher proportion of the elderly (and, thus, a higher burden of chronic diseases requiring ambulance care).

There is also little evidence of cooperation between family medicine and non-family medicine specialist physicians. Many issues that could have been resolved through a phone call or messaging app-based consultation with a subspecialist (provider-to-provider teleconsultations), instead, result in a subspecialist visit or hospitalization.

**Third**, the inefficient organization of diagnostic services increases costs and undermines the quality and reliability of testing. The district hospital, the multi-specialty polyclinic, and all three of the family medicine polyclinics all have their own laboratories. For example, each family medicine polyclinic has at least 0.5 laboratory physician positions, and 1.0 laboratory nurse positions, despite the modest number of tests that are performed a day (approximately 20-30 tests). While laboratory physicians must be well represented in any health system, the current staffing level appears unnecessary and wasteful. In fact, there is no reason to have a physician supervising a basic laboratory that performs a few dozen routine tests daily. Laboratory services should be consolidated in a large district clinic (e.g., a district hospital) through the development of an efficient logistics system to transport specimens and electronically report test results similar to those already used in the private sector.

Delivery of other diagnostic services is also fragmented and inefficient. For example, both multi-specialty polyclinic and a district hospital have standalone endoscopy, ultrasound and X-ray services despite being located in the same building or within walking distance from each other.

According to site observations and interviews, it is not unusual for clinicians to disregard laboratory or other diagnostic procedure results from other settings (due to concerns about quality), and order

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<sup>220</sup> Altschuler, Justin, et al. "Estimating a reasonable patient panel size for primary care physicians with team-based task delegation." *The Annals of Family Medicine* 10.5 (2012): 396-400.

<sup>221</sup> Kringos DS et al. (2019). Expert Panel on effective ways of investing in Health (EXPH) Task shifting and health system design. Brussels, European Commission.

duplicative tests in their own facility – an avoidable waste of scarce resources, which the centralization of diagnostic services will address.

A new laboratory services outsourcing initiative is being piloted/rolled out by the Ministry of Health. It sends laboratory specimens to a private laboratory in Tashkent, which is designated to cover two regions with an estimated population of 6 million. This intent to outsource all laboratory services in two regions to a single private sector laboratory has caused concerns among laboratory staff over job security and among clinicians about limited control over the quality and timeliness of services they would have.

**Fourth**, the lack of care pathways and models for conditions that are aligned with current evidence-based practice is driving the problem of inappropriate hospitalizations. As a result of this, there is a tendency to over-hospitalize. For example, over a six-month period in 2022, some 273 emergency and 224 planned operations were performed in total.<sup>222</sup> Table 4 shows frequencies of the seven most common elective surgical operations undertaken in the district hospital. It is clear that these are very basic surgical interventions that should not be delivered in an inpatient setting. In OECD countries, such interventions are provided in outpatient facilities, resulting in much lower costs (for the public sector and, where relevant, for individual patients).

**Table 4. Frequency of surgical operations that do not require hospitalizations (first six months of 2022)**

	<b>Major illnesses/surgeries</b>	<b>Frequency</b>
	Septoplasty (to correct internal nose abnormalities)	48
	Varicocele	37
	Hernia	41
	Removal of the gallbladder	18
	Adenectomy	10
	Lipoma removal	4
	Hemorrhoid removal	4

**Problem 5. Health authorities and managers have limited ability to monitor and optimize/improve performance using local data**

This is due to the absence of a robust performance monitoring system. District X does not have an information system to allow continuous collection and reporting of both administrative and clinical data. All data collection and information exchange are entirely paper-based and relies on Microsoft Word or Excel for summative reporting. Availability of computers and local area or Wi-Fi networks is limited to administrative offices.

Many of the proposed activities to transform the district health system listed below will not be possible without specialized information systems. For example, the success of the proposed centralization of laboratory services requires a robust laboratory information system to record collected specimens and report results electronically to family medicine clinics. Similarly, patient management systems in family medicine clinics and district hospitals are essential to obtaining granular data on the scope and scale of utilized services, including physician and nurse workload and the quality of care. Given the expanded coverage of medicines, pharmacy information systems are critical to reducing errors, faster reporting, and minimizing fraud. Unfortunately, none of the core specialized information systems are available at the district health system.

<sup>222</sup> It should be noted that the currently inefficient norm of having two separate departments in district hospitals, one for emergency care and another for planned hospitalizations, is being eliminated under ongoing Emergency Medical Services reforms.

## The Future Picture – how the reforms will change the health system in District X

To introduce this section, Figure 1 shows how the concrete changes to be made at the district level will target the four high-level strategic objectives of *the Strategy*, that is *efficiency, quality of care, access and work-life balance, and coverage*; while Figure 2 shows how the concrete changes relate to the different service delivery domains, that is family medicine, diagnostic services, ambulance care, and the district hospital.

Figure 1 Outline of reform actions along health system goals

### Outline of reform actions along key health system improvement aims

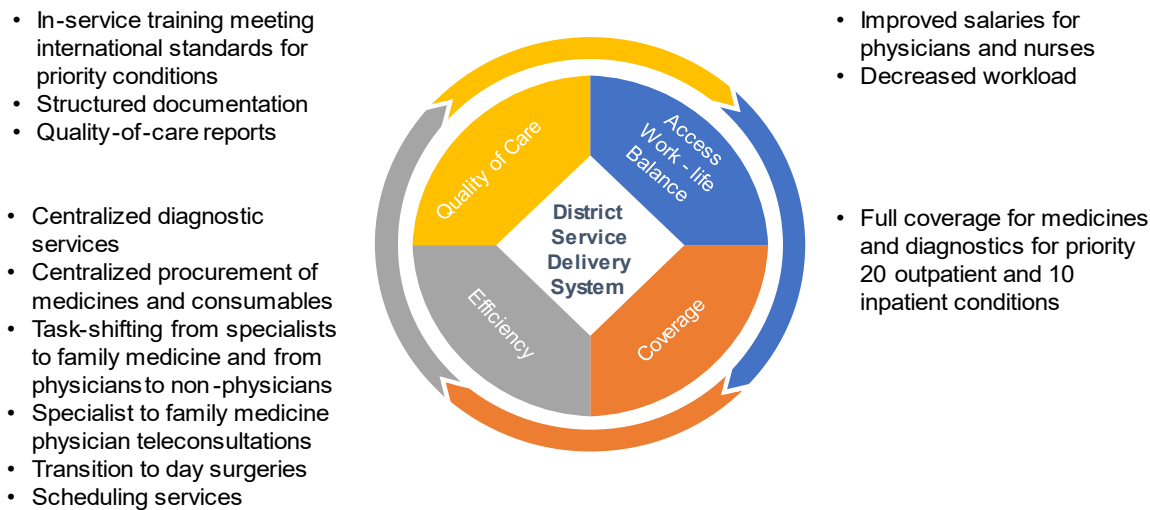
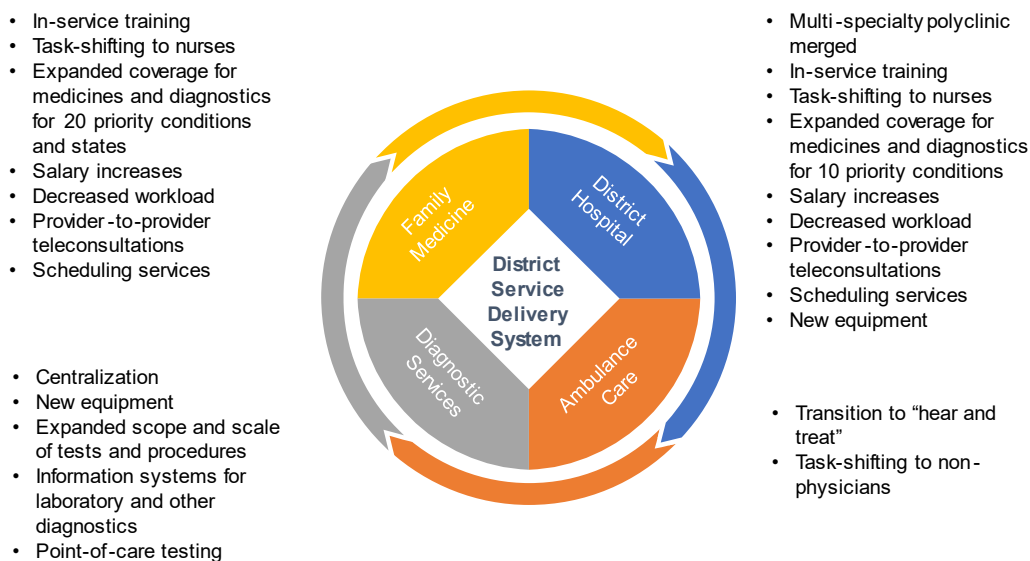


Figure 2 Outline of reform actions along district service domains

### Outline of reform actions along key district service delivery domains



The rest of this section explains how the operational challenges described in the ‘Current Picture’ section of this report will be addressed through the reforms outlined in the *National Health System Strategy*.

### **Addressing Problem 1, and thereby enhancing access to care and workforce work-life balance**

**A vision of future:** *The Strategy will improve recruitment and retention of physicians at the primary care level by enabling the introduction of more attractive physician salaries at this level, alongside enhanced career and training opportunities. Occupancy rates for physician positions in District X will be, at least, 90 percent, excluding shared positions.*

Actions to realize this vision will target the underpinning causes of organizational inefficiencies as follows.

Addressing the current inability to recruit and retain an adequate complement of primary care physicians is at the core of achieving this vision. Challenges in recruitment and retainment of qualified physicians in District X, and, by way of this, the chronic shortage of doctors, will be addressed through implementation of a multi-pronged approach aiming to offer an attractive package comprised of a) competitive salaries, b) more manageable workloads, c) improved career progression pathways, and d) enhanced learning opportunities for physicians (and nurses) at the district health system level. This section will elaborate on the first three elements while the following section will provide more details on improving learning opportunities.

**Competitive salaries and workload.** Physician (and nurse) salaries should be competitive enough to attract and retain qualified staff, considering both the salaries in the private health sector and in secondary and tertiary health facilities in the public sector. In the absence of in-depth analytics on what such a salary level might be, a starting level is suggested to be no less than twice the average salary in the country as reported by the State Statistics Committee; perhaps, in the range of US\$ 600 to US\$ 800 in the current context. This recommendation is informed by the current salaries in the private sector, secondary and tertiary levels of the public sector, feedback from frontline workers, and also experience from Estonia which was faced with similar challenges when it initiated major healthcare reforms. The suggested range can be adjusted once more data becomes available from pilot districts.

Proposed salary increases should be implemented in two stages to align with progress in other activities that are also critical to improved care at the district level (e.g., training, quality-of-care data collection systems, expanded coverage for medicines and diagnostics).

Required funding to almost double the starting salaries for physicians (and nurses) will in part come from improved organizational efficiency (see below) but will also require additional financing from the state budget (through budget increases and/or prioritization of funds for this level of the health system). Specifically, salary increases in District X will be supported by the following:

- salaries designated for 12 percent of unoccupied positions (which are, otherwise, returned to the Ministry of Finance)
- savings from downsizing and integration of multi-specialty polyclinic into a district hospital
- savings from the task-shifting from physicians to non-physician staff in ambulance care
- health budget increases (by a factor of 1.40 to 1.56 by 2025) driven by (estimated) growth overall government budget to cover remaining gaps<sup>223</sup>

In Stage 1, salaries should increase for family medicine physicians and nurses in family medicine clinics (approximately 85 physicians and 300 nurses). The existing position-sharing policy will also be gradually revoked as the attractiveness of family medicine positions is enhanced. The revoking or revision of the position-sharing policy for *District X* will enhance the quality of care and work-life balance through

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<sup>223</sup> See Health Financing chapter of the report

optimizing the workload, allowing more time for care per patient, learning opportunities and time away from work.

*Sources of funding for salary increases in Year 1:*

Following the updated staffing norms for family medicine clinics, District X will require approximately 85 family medicine physicians (vs. the current 106), given the population of 170,000 and panel size of 2,000 population per family medicine physician. This allows to immediately channel funding for 21 positions to salary increases.

Projected increase in health expenditures by a factor of 1.40 (see section of the report on Health Financing) with a following corresponding increase in district health budget will create funding to cover at least 40 percent of proposed salary raise assuming status quo in the distribution of health expenditures.

In Year 2, additional savings can be generated from reductions in the number of ambulance care physicians. These can be reduced by, at least, a quarter with little or no impact on health outcomes, given low hospitalization rates in ambulance care, and inconclusive evidence on the impact of physician-staffed ambulance crews over non-physician-staffed crews on measurable health outcomes even for the most severe cases.<sup>224</sup> Optimization of specialist positions at the multi-specialty polyclinic through integration with the district hospital will generate additional savings through streamlined administration and combined use of physicians in outpatient and inpatient care. Improved care and task-shifting at family medicine clinics and the district hospital will reduce workload for specialists and ambulance care services, freeing up additional funds to support salary increases.

In Stage 2, salaries will increase for non-family medicine physicians and nurses at other district health delivery domains, including hospital care, diagnostic services, and ambulance care. The Stage 2 salary increases should take place in Years 2 and 3 and be supported from additional health funding available from prioritization of primary care and increased overall health spending, given the positive economic forecast in the coming years.<sup>225</sup>

All current or incoming physicians should receive increased salaries according to the staged approach outlined above. However, only those physicians that meet the training requirements set in the following subsection, or those that have passed one of international clinical knowledge licensing exams in Years 1, 2, and 3 will be allowed to retain their jobs, thus, have these increased salaries after the phasing is completed.

**Expanded career opportunities.** Career opportunities for family medicine specialists will be expanded to allow the family medicine specialists with subspecialty training to work in outpatient and selected inpatient departments of the district hospital.

**Addressing Problem 2: Physician and nurse competencies will be enhanced, and, thus, the delivery of health care at the distinct level will meet international standards, improving quality of care.**

**A vision of future:**

<sup>224</sup> Ono Y, Iwasaki Y, Hirano T, Hashimoto K, Kakamu T, et al. (2021) Impact of emergency physician-staffed ambulances on preoperative time course and survival among injured patients requiring emergency surgery or transarterial embolization: A retrospective cohort study at a community emergency department in Japan. PLOS ONE 16(11):

<sup>225</sup> World Bank. 2022. "Social Protection for Recovery" Europe and Central Asia Economic Update (Fall), Washington, DC

i) *The quality of **outpatient** care provided within family medicine clinics meets international standards for, at least, 20 priority conditions (accounting for up to 40 percent of office visits)*

ii) *The quality of **inpatient** care provided at the district hospitals meets international standards for, at least, 10 priority conditions (accounting for approximately 70-80 percent of current inpatient admissions)*

Actions to realize this vision will target the underpinning causes as follows.

**Inadequate physician and nurse competencies.** Improvement in clinical practice is the most critical and, perhaps, challenging element needed to improve the performance of the health care system in District X. As a matter of fact, it is not feasible to quickly improve care across all conditions given the foundational shortcomings in the basic medical and nursing education, as well as continuing professional development. Therefore, reform activities will be two-fold:

- rigorous **in-service training** activities based on international evidence will aim to immediately fill selected competency gaps in the existing workforce, and
- **pre-service educational reforms** (covered under the sustainability actions below and under the Human Resources component of the Background Papers) will focus on incoming workforce, aiming to address gaps in a much broader set of conditions.

For in-service training, initial prioritization with a carefully planned future expansion will be undertaken, in which a list of the most prevalent outpatient conditions and services facing primary care physicians, based on international data from health systems with well-performing primary care, would be utilized until granular local data becomes available to further inform decisions.

**Family medicine level.** Multiple international studies document the most common conditions for family practice, which have been used to come up with an initial list of priority conditions and services for Uzbekistan (Table 5). Current international guidelines/best practices and clinical flowsheets will be adapted to produce fit-for-context educational and case management materials and training to enhance the competencies of family medicine physicians and nurses. This is especially necessary as very few primary care physicians can currently read the international clinical literature, and even fewer are sufficiently trained in clinical reasoning/problem solving to use such literature in an appropriate way.

**Table 5. Priority conditions and services for family medicine**

Disease Prevention, Health Promotion	Minor illnesses	Major illnesses
Child immunizations	Upper respiratory tract infection	Hypertension
Prenatal care	Skin conditions (eczema, shingles, urticaria)	Diabetes
Family planning	Anemia	Asthma and COPD
Pregnancy test	Parasitosis	Pneumonia
Well baby care	Gastrointestinal conditions (dyspepsia, gastroenteritis)	Osteoarthritis
Counseling for diabetes, coronary heart diseases, hypertension		Rheumatoid arthritis
		Coronary artery disease
		Hepatitis B
		Hepatitis C

In-service training of family medicine physicians and nurses in priority conditions and task shifting will be undertaken in stages:

*In Stage 1 (Year 1)*, the training will be focused on disease prevention and health promotion services and three major illnesses (hypertension, diabetes, and coronary artery disease) of the priority conditions (Table 5). Online training programs and job-aids will be developed with support from international experts with experience in training and active family medicine or internal medicine or nursing practice license in one of the countries with rigorous licensing programs such as the UK, Australia, Canada, and the USA. All family medicine physicians and nurses in family medicine clinics will be required to pass the online training in three major (chronic) conditions and priority prevention and promotion services, combined with limited on-site mentorship support from international and local experts.

*In Stage 2 (Year 2)*, the program will expand to cover minor illnesses.

*In Stage 3 (Year 3)*, the program will expand to cover the remaining four major illnesses.

The training will be provided to healthcare workers at no cost.

Given the parallel reforms initiatives in medical and nursing education, incoming physicians will be equipped with basic competencies through competency based training, and passing international clinical exams as part of pre-service training, thus, they will be equipped with these competencies by default.

**District hospital level.** In-service training will be scaled to district hospital staff in a similar fashion, with one-year delay where outpatient and inpatient department non-surgical specialists will be required to take the same courses as family medicine physicians. Six prevalent inpatient conditions (Table 6) will be prioritized in Year 3, requiring physicians and nurses to pass relevant courses (e.g., maternity unit workers in deliveries) and follow a new care delivery pathway/design developed for each condition.

Online training programs and job-aids will be developed with support from international experts with experience in training and hospital care, and holding an active physician specialist or nurse licenses from one of the countries with rigorous licensing programs (such as the UK, Australia, Canada, and the USA). All physicians and nurses in the district hospital will be required to pass the online training course in relevant major priority conditions, combined with limited on-site mentorship support from international

and local experts. Going forward, once more granular data becomes available, and the reformed structure of specialty services at the district hospital is in place, the focus will shift beyond the initial priority lists to other prevalent conditions, including more complex surgical procedures requiring more intensive in-service training support.

**Table 6. Frequency and percentages of total district-level hospitalizations by diagnosis, 2021**

Diagnosis	Frequency/% of total hospitalizations (11,566)
Acute respiratory infection	3,201/28%
Deliveries	2,505/22%
Ischemic heart disease	789/7%
Hypertension	606/5%
Noninfective enteritis and colitis	589/5%
Injuries, poisoning	543/5%

Ultimately, in-service training will achieve enhancement in three key areas:

- New disease specific knowledge and skills in line with current international guidelines
- Redesigned structured documentation (e.g., flowsheets and order sets)
- Redesigned disease specific care pathways (e.g., clinical care pathways).

As a result, the average length of stay for deliveries in *District X* is expected to reduce from approximately five days (almost twice of that in well-performing health systems) to three. An updated care pathway for deliveries supported by enhanced competencies of physicians and nurses/midwives will help reorganize current care to achieve improved quality and lower hospitalization duration. Introduced flowsheets and order sets will both help clinicians follow evidence-based recommendations and generate data for performance monitoring in general, and quality-of-care monitoring specifically.

Changes in ambulance care are currently being supported by ongoing emergency care services reorganization that aims, among other things, prioritize call triaging to differentiate and manage calls that can be addressed by “hear and treat” approach (via the phone) without dispatching a crew. These reforms will be underpinned by training and service reorganization but require closer integration with other types of care in the district.

**Addressing Problem 3: Ensuring adequate availability of key inputs (essential medicines and diagnostics) at the primary care level, ensuring access, coverage, and quality of care**

**A vision of future:** *Patients with priority (outpatient and inpatient) conditions will have full coverage for essential medicines and diagnostics as defined by current evidence-based international guidelines.*

Actions to realize this vision will target the underpinning causes as follows.

Improved availability of essential inputs will be achieved in a stepwise approach in parallel with competency strengthening activities. For example, in Year 1, prenatal care, family planning, pregnancy testing, and three chronic conditions (hypertension, diabetes, and coronary artery disease) prioritized for competency training will be prioritized for improved availability of medicines and tests necessary to ensure truly high-quality care. A list of essential diagnostics and medications required for the management of two priority conditions in accordance with current international guidelines is provided below, as an example.

**Table 7. Frequency of diagnostic procedures and medications per year**

Diagnostic procedures and medications	Frequency per year
Hypertension	1
Blood biochemistry (sodium, potassium, serum creatinine and estimated glomerular filtration rate (eGFR), lipid profile and fasting glucose)	1
Dipstick urine test	1
12-lead ECG	1
ACE inhibitor (e.g., Lisinopril (10 mg, N30, one tablet, once a day))	365
Calcium Channel Blocker (e.g., Amlodipine (10 mg, N30, one tablet, once a day))	365
<b>Stable coronary artery disease</b>	
ECG	2
Blood cholesterol/lipids	2
Hypolipidemic agent (e.g., Lovastatin (40 mg, once a day))	365
Beta-blockers – (e.g., Metoprolol (100 mg, once a day))	365
Antiplatelet agents – (e.g., Aspirin/Clopidogrel 75 mg, once a day)	365
Nitrates – (e.g., Nitroglycerin (twice a day))	365
Calcium channel blockers – (e.g., Amlodipine (5 mg, once a day))	365

In Year 2, the availability of essential inputs will gradually be expanded to include other priority conditions for family medicine and hospital care at the district hospital level. Diagnostic capacity will be strengthened by providing necessary equipment for laboratory and other diagnostics (e.g., an automated biochemical analyzer, automated urine analyzer, ECG machines).

#### **Addressing Problem 4: Organizational inefficiencies**

##### **A vision of future:**

- i) *A district hospital that provides a wide range of integrated outpatient and inpatient specialist services, including provider-to-provider teleconsultations to family medicine physicians*
- ii) *The share of outpatient specialist and ambulance care physicians is reduced as a ratio of the total number of physicians*
- iii) *A central laboratory at the district hospital level has effective specimen transportation and electronic reporting of results*
- iv) *A unified diagnostic department at the district hospital level with mobile teams that perform selected diagnostics at family medicine clinics per scheduling*
- v) *At least 30 percent of total surgeries are performed as day surgeries*
- vi) *Transformation/optimization of care delivery processes through new care pathways and task-shifting*
- vii) *At least 30 percent of ambulance calls are managed through “hear and treat” approach without dispatching an ambulance crew*
- viii) *At least 70 percent of specialist consultation appointments are made through electronic scheduling services*
- ix) *Emergency care and planned inpatient departments at district hospital are merged*

Actions to realize the above vision will target the underpinning causes of organizational inefficiencies as follows.

**Targeting the inefficient distribution of physicians.** Multi-specialty polyclinics and district hospitals will be integrated to offer integrated inpatient and outpatient specialty services. Efficiency gains will be

achieved from more efficient use of specialist positions through integration of outpatient and inpatient specialist care and removing redundant physician positions at the outpatient level. Physician positions in ambulance care will be also reduced through task-shifting to paramedics and triaging centers. Emergency and planned care inpatient departments at district hospitals will be merged in line with the current emergency medical services reforms.<sup>226</sup> Enabled by efficiency gains, and informed by international data, staffing norms for district hospitals and ambulance care will be revised.

**Targeting the inadequate extent of task-shifting and the lack of coordination across clinical settings.**

Further efficiency gains will be achieved through implementation of updated disease specific care pathways and associated delivery reorganizations and task-shifting. Evidence-based international care pathways will be adapted to the local context for each of the priority outpatient and inpatient services and conditions and will include, among other things, task-shifting from specialists to family medicine physicians, and from family medicine physicians to nurses. Below is an example of tasks that should be shifted to nurses in care for diabetes patients.

**Table 8. Proposed new tasks for nurses in family medicine clinics in diabetic care**

<p><b>Tasks for nurses in outpatient diabetes care:</b></p> <ul style="list-style-type: none"> <li>● in-clinic/remote monitoring and self-care</li> <li>● blood glucose</li> <li>● blood pressure and weight</li> <li>● medication plan and compliance</li> <li>● foot, kidney, dental, and eye complications</li> <li>● Insulin injection sites etc.</li> <li>● Patient education on lifestyle changes</li> <li>● smoking cessation</li> <li>● diet</li> <li>● weight control</li> <li>● physical exercise,</li> <li>● alcohol consumption etc.</li> <li>● counselling on psychosocial challenges</li> </ul>
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Expanding the scope of practice and responsibilities of physicians and nurses in line with international best practices is necessary but not sufficient. To achieve sustainable improvements in outcomes and efficiency, a comprehensive set of interventions will need to be undertaken, including a) identification of the priority list of expanded scopes and services to be shifted based on international evidence, b) development of new job descriptions with competency requirements, c) in-service staff training to enable expanded competencies, d) a formal process to certify competencies, e) establishing an enabling physical environment (rooms and equipment), and f) setting up an information and documentation system that can facilitate monitoring of changes in processes, outcomes and efficiency.

Task-shifting from family medicine physicians to nurses will constitute a substantial improvement over the current inefficient care model in which physicians are almost entirely responsible for all services, with only a limited (assistive) role for nurses. There is abundant international evidence that supports task-shifting, and the introduction of advanced roles for nurses in primary health care, by expanding their role

<sup>226</sup> Presidential Decree 283, June 16, 2022

in screening, health education, and monitoring of patients with selected chronic conditions and health states.

An electronic referral system for patients referred from family medicine physicians to specialists at the district hospital should be implemented, building on the Syrdarya pilot. The electronic referral will allow a better coordination of care and task-shifting from a hospital specialist to a family medicine physician where a specialist can review patient data prior to a visit to determine whether an office visit is, indeed, necessary, or provider-to-provider teleconsultation can help resolve the problem. This set up will also allow to order tests and procedures that need to be completed prior to the visit in advance, all of which will contribute to fewer number of visits to the specialist and better engagement of family medicine physicians in the care of his/her patient taking place outside the family medicine clinic.

Reimbursement for provider-to-provider consultations between specialists and family medicine physicians should be implemented to foster task-shifting to family medicine.

Changes in ambulance care are currently being supported by ongoing emergency care services reorganization. The ambulance care reforms prioritize, among other things, call triaging to differentiate and manage calls that can be addressed by phone without dispatching a crew, thus, shifting tasks from ambulance crews to nurses (supported by physicians).

**Targeting the inappropriate hospitalizations for minor procedures.** In line with current international best practices, up to half of surgeries currently performed in general hospitals can be performed on an outpatient basis, leading to substantial cost-savings.<sup>227,228</sup> The share of day surgeries in total surgeries at the district hospital (currently non-existent) should dramatically increase. In the first stage, care delivery has to be redesigned to shift 5 inpatient surgeries that do not require complex equipment to an outpatient surgery (e.g., hemorrhoid removal). In the second stage, once appropriate equipment (e.g., laparoscopic equipment) becomes available, 5 more surgeries (e.g., gall bladder removal, appendectomy) can be performed as day-surgeries, with a goal of, at least, 30 percent of surgeries to be performed as day surgeries.

**Targeting the inefficient organization of diagnostic services.** Transition to centralized diagnostic services at the district level that cater to the needs of all health facilities in the district (e.g., family medicine polyclinics, multi-specialty polyclinics, and district hospitals) will take place in two stages, and will yield savings from the economies of scale and enhanced quality control.

In Stage 1, laboratory services will be consolidated at the district level, with family medicine clinics offering point-of-care testing in selected areas. Purchase of high-throughput automated analyzers (where appropriate), development of an efficient logistics system to transport specimens and electronic reporting of test results to a health facility and to patients should be undertaken. In Stage 2, centralization of other diagnostic services at the district level should begin.

Centralized diagnostic services will require implementation of appropriate information systems, such as a laboratory information system. Staffing norms will also need to be revised as staffing requirements under centralized laboratory services tend to be lower compared to running multiple decentralized diagnostic units. A referral system for diagnostic services, building on the national tertiary care referral experience, should be implemented to optimize utilization of diagnostic services.

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<sup>227</sup> Friedlander DF, Krimphove MJ, Cole AP, Marchese M, Lipsitz SR, Weissman JS, Schoenfeld AJ, Ortega G, Trinh QD. Where Is the Value in Ambulatory Versus Inpatient Surgery? *Ann Surg*. 2021 May 1

<sup>228</sup> Inpatient vs. Outpatient Surgeries. Content last reviewed August 2018. Agency for Healthcare Research and Quality, Rockville, MD

## **Strengthened care pathways**

New care pathways for priority inpatient conditions will help reduce inappropriate hospitalizations, shorten hospital stays, and foster integrated care with the family medicine clinics. New care pathways for priority outpatient and inpatient conditions, based on the current international evidence, should be developed in stages with support from international experts in family medicine and hospital care. The development of care pathways will be aligned with the training and task-shifting activities, preceding both training and service reorganization (e.g., task-shifting).

## **Addressing Problem 5: The lack of robust performance monitoring system**

### **A vision of future:**

*District health authorities and providers use locally generated electronic data to inform decisions in performance improvement across key district health delivery domains.*

Improvements in this target area will be achieved through implementation of the following activities and information systems.

### *Activities:*

- Review and optimize legacy data information flow and reporting processes
- Create district-level registries of patients, health practitioners, and health facilities and clinical data repository
- Create a minimum set of terminology and exchange standards needed at the primary care level
- Design and pilot patient and healthcare professional identification and authentication solutions

### *Information systems:*

- Patient management system for family medicine clinics and district hospitals
- Laboratory information system
- Picture archiving and communication system
- Pharmacy information system
- Data warehouse and analytics system
- Enterprise resource planning system, covering at least human resources, and material management for public district health facilities
- Flowsheets and order sets for priority conditions

Patient management software aiming to collect 10 to 20 encounter-specific data points per patient in each family clinic and a district hospital will allow to collect granular utilization data for proper planning and performance monitoring. A set of software solutions will help improve data collection and optimize care delivery processes across a range of priority services such as immunization, family planning, laboratory and other diagnostic services. Flowsheets are critical to collecting and monitoring of quality of care, which, in early stages, should be implemented as paper-based but digitized for reporting purposes (as part of a patient management system). Reporting and analytics of key indicators will be made possible by the implementation of the data warehouse and analytics system. Solutions for many of the services indicated above already exist. For example, data warehouse and analytics system developed for emergency medical services can be adapted and deployed in District X. Others will have to be developed or adapted with consideration of national architecture, information exchange and infrastructure.

## Annex 1. System-level activities to ensure sustainability and evolution of the reform changes in District X

Overall, the qualitative data, alongside the consensus view among health system stakeholders in the country, indicates that the performance of health services available at the district level is substandard. For District X, the root causes of these failures cannot be resolved without deep changes at the system-level, including, *inter alia*, reforms to the medical education system, the introduction of an evidence-based professional culture among health workers, supported by routine quality-of-care monitoring and reporting, and expanded fiscal space. International evidence shows that “quick fixes”, such as the introduction of financial incentives,<sup>229</sup> are not sustainable and can generate undesirable unintended effects. To ensure that the intended outcomes are sustainable in Uzbekistan, the set of practical impacts for service delivery in District X outlined above will need to be supported by system-level changes. In effect, the changes at the district level will be embedded within a wider system-level enabling environment that will stimulate and sustain those changes. This section outlines the content and sequence of the system-level reforms outlined in *the Strategy* through which the above-mentioned vision of the future will be supported to ensure the sustainability of the transformative changes undertaken at the district health system level.<sup>230</sup> Figure 3 provides a visual summary of the system-level action content as it relates to changes at the district level.

Figure 3.

### Systemlevel actions supporting transformations at the district level



Specifically,

1. The quality (competency) of incoming health human resources, a major root cause of the underperformance in the system, will be improved through:
  - a) Introduction of competency-based curricula.
  - b) Reducing medical school admissions and capping the number of graduates at 300.

<sup>229</sup> Singh NS, Kovacs RJ, Cassidy R, Kristensen SR, Borghi J, Brown GW. A realist review to assess for whom, under what conditions and how pay for performance programmes work in low- and middle-income countries. *Soc Sci Med.* 2021 Feb;270:113624. doi: 10.1016/j.socscimed.2020.113624.

<sup>230</sup> Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med.* 2014 Nov-Dec;12(6)

- c) Expanding bedside teaching (minimum two-hour daily bed-side teaching).
- d) Setting minimum standards for graduation that meet international standards (passing score on IFOM BSE exams to advance to a clinical year and on a clinical exam to graduate).
- e) Fostering evidence-based medicine (prioritizing implementation science and clinical epidemiology).

2. Additional resources to bridge the financing gap required to implement the reforms will be secured through supplementary funding available from meeting the government's long-standing commitment to allocate at least 15.4 percent of general government expenditure to the health sector and through a number of activities addressing operational inefficiencies. Specifically:

- a) In a scenario with 2 and 5 percent annual real growth in overall government expenditure, if 15.4 percent of government expenditure is allocated to health, then total government health expenditure will increase by a factor of 1.4 and 1.56, respectively, in 2025.
- b) Centralized procurement of medicines and consumables through centrally negotiated price contracts will help negotiate lower prices and better distribution terms.

3. Implementation of national registry of health facilities, health workers, and patients, along with additional financing to build digital health infrastructure, will enhance generation and exchange of data. Specifically:

- a) A national digital health governance board with advisory and management functions should be created.
- b) A national patient, facility, and provider registries that include all residents, healthcare facilities (including all public and private facilities), and health workers will be established.
- c) The Ministry for Development of Information Technologies and Communications, with support from the Ministry of Health, will establish a clear and transparent universal certification process, building on international best practices, for software used in health facilities to foster quality and innovation through better engagement of public and private providers.
- d) Diagnostic image archives should be piloted and rolled-out. Provider-to-provider teleconsultation solutions should be implemented.
- e) A new fund for recurrent maintenance of ICT hardware and software in primary care facilities should be introduced.

4. Establishment of a sustainable focus on quality of care at all levels will be achieved through:

- a) A newly established health information unit in charge of collecting quality-of-care data from all facilities (public and private), setting standards, verifying data quality, certifying data collectors, and generating reports and analyses.
- b) A national quality indicator list and a national reporting framework, including public reporting.
- c) Designation of organizations for building quality improvement skills in the health system and rapid adaptation of international quality improvement programs for local use.
- d) A requirement for all health facilities to have at least one staff with basic training in quality improvement, including the introduction of a paid quality improvement facilitator position in each district.

## Conclusion

This section of the Strategy has presented a series of background papers, focusing on eight health system components (service delivery, financing, public health, quality of care, digital health, pharmaceuticals and medical devices, human resources, and governance of the private sector), and an application to a representative district-level health system, identifying:

- the main system-level shortcomings,
- their causes, and
- the reforms and actions needed to address them, alongside supporting international evidence.

These findings have been drawn upon to support the formulation of the *Concept Part 2*) and *Consolidated Roadmap (Part 3)*, in which a single, unified package of reforms has been outlined. Collectively, the papers demonstrate a number of critical shortcomings that impede progress towards the Government's core health system objectives – i.e., improved access to care, health system efficiency, financial protection, and quality of care - and outline the reforms and specific actions required to achieve improved performance against these objectives.

In this conclusion, a summary of the main findings of the situation analyses, focusing on critical shortcomings, and the reform recommendations and specific actions to be taken forward, are outlined.

**Service delivery.** Currently, a shortage of competent physicians, and limited availability of medications and diagnostics restrict access to, and the quality of, primary care, and result in high rates of specialist referrals and hospitalizations, while hospital care is fragmented across a large and growing number of specialty centers. Recommended reforms responding to these challenges include the following:

1. The primary care system should be strengthened, so that all patients will have free access to the full range of essential drugs, diagnostics, and services for priority conditions at that level, to be provided by an adequate number of competent/well-motivated clinicians.
2. A stricter referral system should be introduced, to ensure that the large majority of health care that *can* be provided at the primary care level *is* provided at that level; and incentives are introduced to promote compliance with referral guidelines across all levels.
3. A shift to integrated multi-specialty inpatient care should be realized through phased transitions in the allocation of resources, including capital financing, from specialty hospitals to general hospitals at the regional and national levels.
4. Actions to promote transparency and accountability for outputs, outcomes, and impact of health services provided at public and private health care facilities should be undertaken, and annual performance reports should be issued and made publicly available.

**Financing.** Currently, government health expenditure is inadequate for the four critical objectives (access, efficiency, financial protection, quality of care) to be met, especially at the primary care level, leading to gaps in coverage and high out-of-pocket payments. Recommended reforms responding to these challenges include the following:

1. The Government should realize its long-standing commitment to allocate at least 15.4 percent of general government expenditure to health.
2. This will enable higher starting salaries for primary care physicians and nurses, increasing physician numbers at the primary care level and enhancing availability of other key clinical inputs (in line with the service delivery objectives outlined above).

3. Increased resources will also enable incentive schemes to be introduced, aimed at encouraging staff to improve their clinical competencies, routinise the collection and use of clinical data for quality improvement, and better integrate service delivery across all tiers of care (e.g., introducing reimbursement mechanisms for provider-to-provider teleconsultations).
4. Case-based (DRG) payment models should be introduced at Oblast level, covering both government-funded and patient-funded services.

**Quality of care.** Currently, there is a general failure to provide evidence-based care, especially at the primary care level. This is partly due to the limited competencies of staff and a lack of resources (as outlined above), but *also* the absence of a national quality improvement system. To address these challenges, recommended reforms include improvements to (a) the quality information system and (b) quality management capacity within the public health system, with particular focus on the following:

1. On information:
  - The Government should establish a health information unit for collecting quality data from all facilities, setting standards, verifying data quality, certifying data collectors, and generating reports and analyses.
  - Introduce structured documentation templates – including new clinical care flowsheets for primary care – to aid the collection of quality-of-care data.
  - Implement national, standard, on-going patient experience surveys and periodic staff surveys of all facilities (public, private) on engagement and patient safety culture.
2. On capacity:
  - Establish quality improvement agencies and quality campaigns.
  - The Government should implement a statutory requirement for all health facilities to have at least one staff member with basic training in quality improvement, and for a paid quality improvement facilitator position to be created in each district.

**Human resources.** The quality of newly trained clinicians entering the health workforce is low. This is due to poor training, large class sizes with inadequate bedside teaching, and a lack of national qualifying examinations that meet international standards. Recommended reforms that respond to these challenges include the following:

1. Codes of human resource management practice - as outlined by ISO 30408:2016 Guidelines on Human Governance – should be adopted.
2. A national registry of health workers should be developed.
3. A comprehensive national board qualifying examination system, which meets international standards, should be established and enforced, requiring all graduates to pass the exam prior to entering clinical practice.
4. Specific opportunities for task shifting (e.g., specialist to family medicine doctor, family medicine doctor to practicing nurse) to increase the efficiency of the health system and to ensure the accessibility of care should be identified and utilised, with training programs modified/expanded to support this.
5. Medical educational programmes should be modernised to focus on competency-based standards.
6. New advanced professional educational programmes leading to Baccalaureate, Masters and PhD for nurses, midwives, and other mid-level professions, should be introduced.
7. Faculty expertise in clinical epidemiology and implementation science, critical to the expedited application of research findings to practice, should be enhanced through international study and partnerships with overseas training centres.

**Digital health.** Currently, there is limited ability to monitor performance of the health system (including provider organizations in the public and private sector); or take data-driven actions to address shortfalls in performance due to absent or out-of-date information systems and technologies. Recommended reforms responding to these challenges include the following:

1. A national digital health governance board with advisory and management functions should be created.
2. Comprehensive national patient, facility and provider registries should be established.
3. The Ministry for Development of Information Technologies and Communications, with support from the MoH should establish a clear and transparent universal certification process, building on international best practices, for information software used in facilities to foster quality and innovation through better and equal engagement of public and private facilities.
4. Diagnostic image archives should be piloted and rolled out.
5. Provider-to-provider teleconsultation solutions should be implemented.
6. A new fund for recurrent maintenance of ICT hardware and software in primary care facilities should be introduced.

**Pharmaceuticals and medical devices.** Currently, procurement of essential medical products is partially decentralized, and standards for manufacturers and distributors are limited, and not fully enforced. Recommended reforms responding to these challenges include the following:

1. Current medicine pricing regulation policies should be reviewed. An ongoing system to measure medicine prices, availability, affordability, and price components should be developed.
2. All local pharmaceutical manufacturing companies must be made fully compliant with National GMP Guidelines by end-2023 – and those that are not compliant must be forced to close.
3. A legally independent Medicines Regulatory Authority of Uzbekistan, which is free of conflicts-of-interest and which has an autonomous governance structure that includes the MoH, should be established.
4. A centralised medicine and medical device supply management system in the public sector should be re-established.
5. A national plan to promote rational and ethical prescription and appropriate use of medicines should be developed.

**Public health.** Currently, public health capacities are weak, and fragmented; major gaps exist in the detection and management of notifiable conditions (e.g., low testing rates among high-risk groups – men who have sex with men (4 percent), injection drug users (31 percent) and sex workers (16 percent)); no integrated electronic systems exist to collect and analyze epidemiological and laboratory data, including data on antimicrobial resistance and traffic accidents, to inform public health action. Recommended reforms responding to these challenges include the following:

1. A national public health center should be established to bring the currently fragmented public health institutions' functions under a unified umbrella control of a single entity.
2. The current number of public health laboratories (387) should be reduced, with capacity concentrated in a smaller number of "laboratory hubs", each equipped with modern, high-throughput laboratory equipment.

3. An integrated information system to monitor behavioural risk factors and major infectious and non-infectious diseases should be established.
4. Testing and management for hepatitis B and C should be introduced at the primary care level. Sentinel surveillance sites for antimicrobial resistance should be established to routinely inform clinics on the local antimicrobial situation.

**Governance of the private sector.** Currently, there is a lack of evidence-based, data-informed strategic oversight of the country's growing private health sector, which is comprised of secondary-level private clinics and hospitals that account for a growing proportion of demand among higher-income population groups, alongside a preponderance of smaller-scale and poorer-quality providers. In response to these challenges, the Government should undertake to build a robust public policy framework to regulate the private sector to ensure its development and growth are complementary to those of the public sector and, thus, aligned to the goals of *the Strategy* (i.e., improved access, efficiency, financial protection, and quality of care). Specific recommended reforms include the following:

1. Private facilities should be required to report into the emerging national health information system; tax offices should provide the MoH, on a quarterly basis, with deidentified information on the types, volumes, and prices of the medical services provided in the private sector.
2. Government oversight of the private sector's scope of operations and clinical performance should be strengthened (including routinised monitoring and inspection of private health facilities, removing the current 'moratorium' on these activities) through the introduction of a new independent regulator.
3. Purchasing arrangements should transition from *ad hoc* contracting to criteria-based, selective contracting.
4. Transparent and open public-private policy dialogue should be introduced and institutionalized.
5. Action should be taken to ensure that public-private partnerships (PPP) are targeted at the capital investment priorities of the health system, as defined under the service delivery situation analysis outlined above and should ensure that contracts do not undermine health economies at national / oblast levels.

Collectively, the nine reports outlined in this document provide the evidence upon which the objectives of *the Strategy* – to achieve large-scale and sustainable improvements in access, efficiency, financial protection, and quality of care – can be realized. Given major gaps in availability of local quantitative data, the situational analyses and recommendation sets outlines in these papers drew upon observations, expert opinion, and international evidence, as well as quantitative data where available. Future adjustments and course corrections during implementation may be required as more local quantitative data becomes available. To support implementation, the MIFT and the MoH will need to ensure appropriate access to international expertise, at least during the first two-three years of the Health System Strategy's national roll-out. In addition, the MoH should set up a strong data-driven and evidence-based evaluation and monitoring system to track progress against the Strategy's workplan, with annual reviews and implement timely course-corrections, as needed.

## Part 2, Section 1. The Concept

### INTRODUCTION

Since 1991, the Republic of Uzbekistan has initiated a number of reforms aimed at improving the performance of the health system. New mechanisms and frameworks for primary health care (PHC) have been introduced, leading to multiple improvements – including a shift from an inefficient, multi-tiered system of primary care to a more efficient two-tiered system. Training for general practitioners and nurses has been upgraded, and approaches to maternal and child health, public health, and monitoring and evaluation modernised. These improvements have been supported by major capital investments in primary care, including the construction of new facilities, and the purchasing of new medical equipment.

Reforms undertaken in parallel to the above have focused on the secondary and tertiary care levels of the health system, leading to improvements in republican-level facilities, rationalisation of the physical estate, and an improved system of financial incentives and remuneration for doctors and medical personnel. Policies to modernize higher medical education have been initiated. At the same time, a supportive enabling environment for the private sector has been established, which has led to rapid growth in both the scale and scope of care available to the population.

The impacts of these reforms are reflected in improvements to several key population health indicators, including a decrease in neonatal mortality from 30.9 deaths per 1,000 live births to 9.9 deaths between 1990 and 2018 and an increase in life expectancy of 5.1 years over this period. Yet the degree of progress has been less than that of other countries that began major reform initiatives around the same time as Uzbekistan. For example, the neonatal mortality rate in Uzbekistan is still double that of Türkiye and nine times that of Estonia. Shortfalls in the quality of both antenatal care and hospital services are implicated in Uzbekistan's underperformance in neonatal care, since major causes of neonatal death in the country (e.g., preterm birth complications, hemorrhage, and sepsis) do not require large-scale additional investments to improve, and should not cause deaths in the presence of timely and effective care. In Uzbekistan, many deaths have occurred that could have been avoided in the presence of a stronger health care system. For example, in 2016, an estimated 42,851 lives ended (about a quarter of the total deaths) due to non-utilization of needed health care or poor-quality care.<sup>1</sup> While preventable deaths due to non-utilization can in part be driven by the constraints stemming from the level of economic development and can be addressed over time as the country transitions into an upper middle-income country as part of its aspiration, poor-quality care, in contrast, can be linked to deficiencies in the organization of care, and should be prioritized for intervention in the short-to-medium-term.

Many key elements of underperformance originate in critical system-level shortcomings, as follows. First, the health system's use of resources is inefficient. Too many patients are

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<sup>1</sup> Kruk et al 'Mortality due to low quality health systems in the universal health coverage era: a systematic analysis of amenable deaths in 137 countries' The Lancet, 2018.

inappropriately referred from primary to secondary or tertiary care facilities, where the cost of care provision is much greater. Hospital admissions in Uzbekistan are high by global standards – indeed, higher than in most countries of the Organisation for Economic Co-operation and Development (OECD), even those with substantially older populations. Family medicine doctor points and family polyclinics, in which, international experience shows, almost 90 percent of outpatient care can be delivered in a safe and effective way, lack the funding, resources, and workforce competencies required to achieve this, and also to perform their essential gate-keeper functions. There are multiple root causes of these problems. An inadequate medical and nursing training system is a major driver. In addition, once employed, most primary care clinicians operate outside of an effective quality improvement culture. Numerous clinical practice guidelines exist, but adherence to them is limited due to the lack of in-built support systems. Existing information systems and technologies are out-of-date, fragmented and narrowly focused, undermining the ability of national and regional level authorities to monitor performance, or take action to address shortfalls. The procurement and distribution of medical consumables, including pharmaceuticals and medical devices is another major area of weakness. For example, a large share of medical consumables are procured directly by individual facilities through an online bidding process in which a large number of distributors take part and health facilities seek the lowest prices - a system that is extremely fragmented and, thus, costly (as the public sector's purchasing power is fragmented across thousands of facilities) and is also likely to compromise the safety and quality of medical consumables.

In addition to these challenges is the challenge of sustained under-funding for the enhancement of critical underperformance areas of the public health care system generally and of primary care in particular. It has been estimated that government health expenditure (GHE) must be *at least* 5 percent of Gross Domestic Product (GDP) to achieve sustainable progress towards Universal Health Coverage (UHC).<sup>2</sup> In Uzbekistan, in 2021, GHE was just 3 percent of GDP.<sup>3</sup> The challenge of underfunding undermines the population's access to care, and the affordability and quality of the care that is utilized. Out-of-pocket payments are estimated to account for almost 60 percent<sup>4</sup> of total health expenditure in Uzbekistan, a figure that has grown in recent years. As a result, many patients incur significant direct costs - which can be catastrophic and in some cases impoverishing – even for clinical services, medicines, and diagnostic tests that are formally part of the state-guaranteed benefit package.

The situation analysis (undertaken by a team of international and local experts in support of the Strategy development) demonstrates that in many cases, the high-level objectives set for previous reforms have not been fully achieved. Partly, this is due to a lack of focus on the underpinning structural components of the health system – which have driven the performance failures set out above (and which are further elaborated in the section below). The objectives and actions set out in previous reform efforts were neither comprehensive nor detailed enough to generate meaningful change in the complex, dynamic and interactive health system of Uzbekistan, in which the generation of meaningful change in a single

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<sup>2</sup> McIntyre, D., Meheus, F., & Røttingen, J. (2017). What level of domestic government health expenditure should we aspire to for universal health coverage? *Health Economics, Policy and Law*, 12(2), 125-137. doi:10.1017/S1744133116000414

<sup>3</sup> Budget for Citizens: Public spending on health in 2021. UNDP

<sup>4</sup> World Bank Development Indicators 2022

component requires simultaneous reforms to multiple interacting components. For example, improving clinical quality at the primary care level requires a better-trained workforce in family doctor posts and polyclinics - but also a level of funding sufficient to ensure the routine availability of, and coverage for, essential diagnostics and medicines – without which patients will be incentivized to bypass primary care and access higher and more expensive levels of care. It requires, too, that the diagnostics and medicines procured have been produced and distributed according to high standards. It requires the establishment of information about the quality of care, and the improvement of the capacity and incentive to use that information among clinical teams. It requires effective Ministry of Health, that has access to the data and analytical capacity it needs to recognize challenges, understand their root causes, and rapidly formulate relevant policy responses.

Therefore, the proposed *National Health System Strategy 2030* sets out a cohesive package of reforms and specific actions that encompass the full range of health system components, namely: service delivery, financing, public health, quality of care, e-health, pharmaceuticals and medical devices, human resources, and governance (including governance of the country's growing private sector). Furthermore, in addition to this Concept (Part 2), this document includes a proposed *Consolidated Roadmap* (Part 3), that constitutes a core part of the Presidential Resolutions on health reforms, in which the intended outcomes from the reforms and the concrete actions and targets necessary to achieve them are outlined in detail. To support the delivery of the proposed *Roadmap*, the Ministry of Investment and Foreign Trade (MIFT) and the Ministry of Health (MoH) will need to ensure that they have access to appropriate international expertise, at least during the first two-to-three years of the Strategy's roll-out. In addition, the MoH will have to set up a strong data-driven and evidence-based evaluation and monitoring system to track progress against the *Roadmap* and implement timely course-corrections where needed. Furthermore, the actions to be taken forward will create new funding obligations, and the Strategy and Roadmap outline how these are to be addressed, and on what timescale – i.e., by implementing the government's long-standing policy of allocating at least 15.4 percent of general government expenditure to the health sector.

### **Expected outcomes – short- and long-term improvements in health system performance**

The Strategy will lead to long-term improvements in:

- *Quality of care*, as workforce competencies are enhanced through the implementation of competency based training and national medical, nursing (and other professional) qualifying exams that meet international standards, and quality-of-care data routinely collected and reported to improve accountability for care;
- *Access to and affordability of care*, by bringing high-quality care for prevalent conditions closer to patients, as family doctor points, polyclinics and district hospitals are better staffed and provide a wider range of high-quality services for free or at low cost.
- *Efficiency of care*, as inappropriate hospital admissions and specialist referrals are reduced, and procurement of pharmaceuticals, diagnostic consumables, and equipment is centralized or price negotiations introduced, and referral-level inpatient care is predominantly provided by general hospitals at regional and national levels, taking greater advantage of economies of scale and scope;

- *Policy- and decision-making capacity*, by strengthening MoH capacity for analysis and evidence-informed, data-driven planning, and improving the availability of data;
- *Transparency*, by making financial, procurement, quality-of-care, and access data publicly available, while addressing conflicts-of-interest by separating policy-making functions from execution functions in eHealth, pharmaceuticals, private sector regulation, and purchasing.

However, in addition to these longer-term outcomes, the implementation of *Strategy* will also, *in the next five years*, secure a range of tangible gains for the population at the primary care level, where it receives approximately 74 percent of inpatient and almost all of (97 percent) of its outpatient services in the public sector) in relation to:

- (1) 20 priority conditions to be assessed and managed in outpatient facilities (family doctors' posts and family polyclinics); and
- (2) 10 additional priority conditions to be assessed and managed in inpatient facilities (district hospitals).

Major improvements to the availability and quality of primary care for at least 20 priority conditions (in outpatient facilities) and at least 10 priority conditions (in inpatient facilities) will be achieved by:

- *Improving recruitment and retention of qualified health workers at the primary care level* by introducing higher monthly salaries - for doctors, no less than twice the national average salary, and for nurses, no less than the national average salary, and permitting family medicine doctors with sub-specialty training to work in internal medicine and paediatrics units in district hospitals, to be enabled by (i) the proposed increases in government health spending, and (ii) increases in efficiency and the proportion of government health spending to be allocated to the primary care level;
- *Improving the competence of the health workforce* by making individual salary increases conditional on workers' passing either:
  - i) online/hybrid continuing professional training on the 20 outpatient and 10 inpatient priority services and conditions, with curricula developed and peer-reviewed with support from licensed general practitioners / family medicine specialists, hospitalists, practicing nurses and other relevant specialists from a country with rigorous medical and continuing professional training (e.g., the US, the UK, Canada, Australia, Germany, Austria); or
  - ii) for family medicine physicians, an international medical clinical science qualifying exam provided by a country with rigorous medical and continuing professional training such the US, the UK, Canada, Australia, Germany, United Arab Emirates (e.g., an International Foundation of Medicine (IFOM) clinical science exam);
- *Providing full financial coverage for all medicines and diagnostics* required to assess and manage the prioritized conditions (the 20 at the outpatient level; and the 10 at the inpatient level) in line with international clinical guidelines developed by one of the US, UK, Australian, Canadian or international professional associations, or World Health Organization and adapted for the Uzbekistan context, enabled by drawing on the increased budgetary resources available at the primary care level, and with a phased expansion to additional services and conditions as additional funds become available;
- *Improving the quality and lowering the cost of medicines and diagnostics* by requiring full compliance with Good Manufacturing Practice (GMP) by all local pharmaceutical

manufacturers, and addressing long-standing inefficiencies in the current procurement and distribution systems by more fully utilizing the buying power of the government (e.g., by implementing centralized procurement and/or negotiated price framework contracts);

- *Strengthening inpatient care capacity at the district level* by developing and applying i) standardized hospital bed (inpatient and day-surgery) capacity norms, informed by population size and modeling of population inpatient care needs, ii) minimum physician and nursing staffing norms informed by population size and international evidence; and iii) transforming district multi-specialty polyclinics into consultative/outpatient departments of central district hospitals
- *Ensuring that high-quality electronic data is available for national and regional health authorities* by requiring all primary care facilities at the inpatient and outpatient levels to implement practice management software to electronically collect and share minimum required office visit and hospital admissions data to a dedicated data warehouse accessible for reporting and analysis at the national, regional, district and health facility levels;
- *Introducing decision-support tools* such as algorithms and standard orders to remind providers of what drugs, tests, treatments, and other services are required for diagnosis, management and follow-up of priority conditions, and flowsheets for simplified documentation of care provided for priority illnesses;
- *Ensuring availability of quality-of-care reports* to help providers identify and fix gaps in patient care and track progress nationally and locally, and eventually make clinical performance data available to the public; and
- *Minimizing patient referrals to specialist care* by enabling provider-to-provider teleconsultations initiated by primary care physicians (using WhatsApp, Zoom, Telegram, or other secure messengers/connections) and allowing reimbursement for the multi-profile polyclinics, regional hospitals and specialized centers involved.

These short-to-medium-term actions are recommended to be implemented in a phased approach, beginning in two districts in the Syrdarya region, scaling family medicine and district hospital interventions up to the entire Syrdarya region, and then to all remaining regions by 2028, conditional on tangible improvements taking place in key measures in the initial localities.

## **CRITICAL SHORTCOMINGS TO BE ADDRESSED BY THE NATIONAL HEALTH SYSTEM STRATEGY**

Among the critical shortcomings identified by the team of international and local experts, and which provide the focus of the reforms and actions outlined in the National Health System Strategy 2030, are the following.

Regarding **service delivery**, competencies of staff in family doctor points and polyclinics are inadequate. Service coverage at the primary care level – including the availability of essential medicines and diagnostics – is insufficient. These limitations result in the routine bypassing of primary care facilities, and excessive referrals / self-referrals to secondary and tertiary care facilities, where the cost of service provision is high. In addition, as Uzbekistan experiences an epidemiological transition towards non-communicable diseases and multi-morbidities among a growing elderly population, a multi-specialty approach to caring for patients is essential, and

this is best met by general hospitals that can draw on a broad range of specialists and services. However, concentration of inpatient care in general hospitals has occurred only at the district level, and has stalled at the regional and national levels. The result is that services at the regional and national levels are fragmented, inefficient, and unable to provide high-quality, coordinated, comprehensive care.

**Regarding health financing**, the failure to allocate sufficient funding to the health sector in general, and primary care in particular, restricts the availability and quality of care available in the country. This underfunding constrains the ability of primary care-level facilities to recruit and retain competent medical and nursing staff, while many essential diagnostic procedures and medicines formally included in the state-guaranteed benefit package are not, in reality, fully funded for patients. More generally, user fees and other out-of-pocket payments represent major barriers to access, with estimates that more than 50 percent of the poor's health needs are currently unmet, and health care costs represent a major source of financial risk for families, with 14.4 percent of households incurring catastrophic health expenditure in 2018, and 2.5 percent of the population pushed into poverty due to health care-related costs.

On **human resources**, Uzbekistan graduates large numbers of physicians, nurses and other health professionals, but these graduates often do not have the appropriate competencies necessary to deliver high-quality care. The professional training systems in the country require a major overhaul – a shift in focus from the quantity to the quality of graduates. For example, the 2021 government-approved admission of 4,175 medical students represents a ratio of nearly 12 medical trainees per 100,000 population - placing Uzbekistan towards the higher end of the range for OECD countries (e.g., in Canada, it is 7.5 per 100,000 population, in the US 8.5 per 100,000, in the UK, 13.1 per 100,000, and in Australia 14.1 per 100,000).<sup>5 6</sup> However, public medical schools enrolled nearly 50 percent more medical students between 2017 and 2022 than the number planned by the government - and did so without a commensurate increase in clinical teaching capacity. As result, the ratio of faculty to students in clinical years is far outside of international norms (e.g., the ratio is 1:2 in the USA, and 1:3 in Europe and India), and hence, future physicians have insufficient exposure to clinical training before they begin individual practice. Uzbekistan has also no requirement that medical or other health profession graduates pass any comprehensive examination that meets international standards prior to entering practice. As such, medical educational institutions are not evaluated or compared by the success of their graduates on passing validated, standardised examinations that meet international standards. As a country, Uzbekistan ranks poorly on international scales of biomedical research quality and production, ranking 92<sup>nd</sup> on research impact and lower than any other country of similar size. Efficient and inexpensive research areas, such as clinical epidemiology and implementation science are underdeveloped, despite their substantial potential to improve the quality of care in the country.

On **quality of care**, in addition to low competencies among new and in-service health professionals, there are major limitations in terms of the systematic collection and reporting of quality-of-care data. Documentation requirements are rarely designed to support care and

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<sup>5</sup> <https://lex.uz/docs/5472291>

<sup>6</sup> <https://data.oecd.org/healthres/medical-graduates.htm>

too time-consuming; and efforts to build a “quality improvement culture” are weak. There is little knowledge of modern improvement methods emphasizing analysis of root causes of system failures, optimizing processes, team-based problem-solving and continuous learning. Instead, punishment is used as a motivator, which leads to a reluctance to acknowledge quality problems out of fear. Numerous clinical practice guidelines exist, but adherence to them was observed to be limited, resulting in substandard care. This is likely due to the human resource challenges described above and a lack of structures to help providers keep track of the myriad of complex recommendations appearing in these practice guidelines.

On **e-Health**, existing information systems and technologies are out-of-date, fragmented, and narrowly focused. Reliable data is limited. Decision-making remains reliant on inaccurate and delayed paper-based reporting processes, delaying the recognition of critical health challenges, undermining the design of policies, and impeding the monitoring of related results.

On **the public procurement and distribution of medical consumables, including pharmaceuticals and medical devices, there are major areas of weakness**. A process of centralization is under way, but the system remains fragmented and inefficient - and does not respond adequately to changing needs at the district and facility levels.

**Regarding governance** of the health system, the administrative arrangements at the national and regional levels are insufficient and inadequate to perform the strategic planning and prioritization activities required of a modern state. One manifestation of this is the lack of effective stewardship of the large, and growing, **private health sector** in Uzbekistan. There are more than 7,000 private facilities in the country, accounting for more than 42,000 beds, but information about what they do, for whom, and on what terms is absent; while regulation is limited – resulting in uncontrolled growth of the private sector and, therefore, competition among public and private facilities for scarce human, technical, and financial resources.

To address these critical shortcomings, and generate the required improvement in efficiency, quality, and accessibility of health care in Uzbekistan, the Government and team of international and national experts have developed, on the basis of international expertise, experience and evidence, the set of strategic objectives and specific actions outlined below, to be implemented under the proposed National Health System Strategy 2030. In figure 1, the logical connections between the main reforms to be implemented and the intended outcomes in terms of access, efficiency, financial protection, and quality of care are presented. The logic underpinning this diagram is that:

**Achieving large-scale and sustainable improvements in access, efficiency, financial protection, quality of care, and workforce work-life balance...**

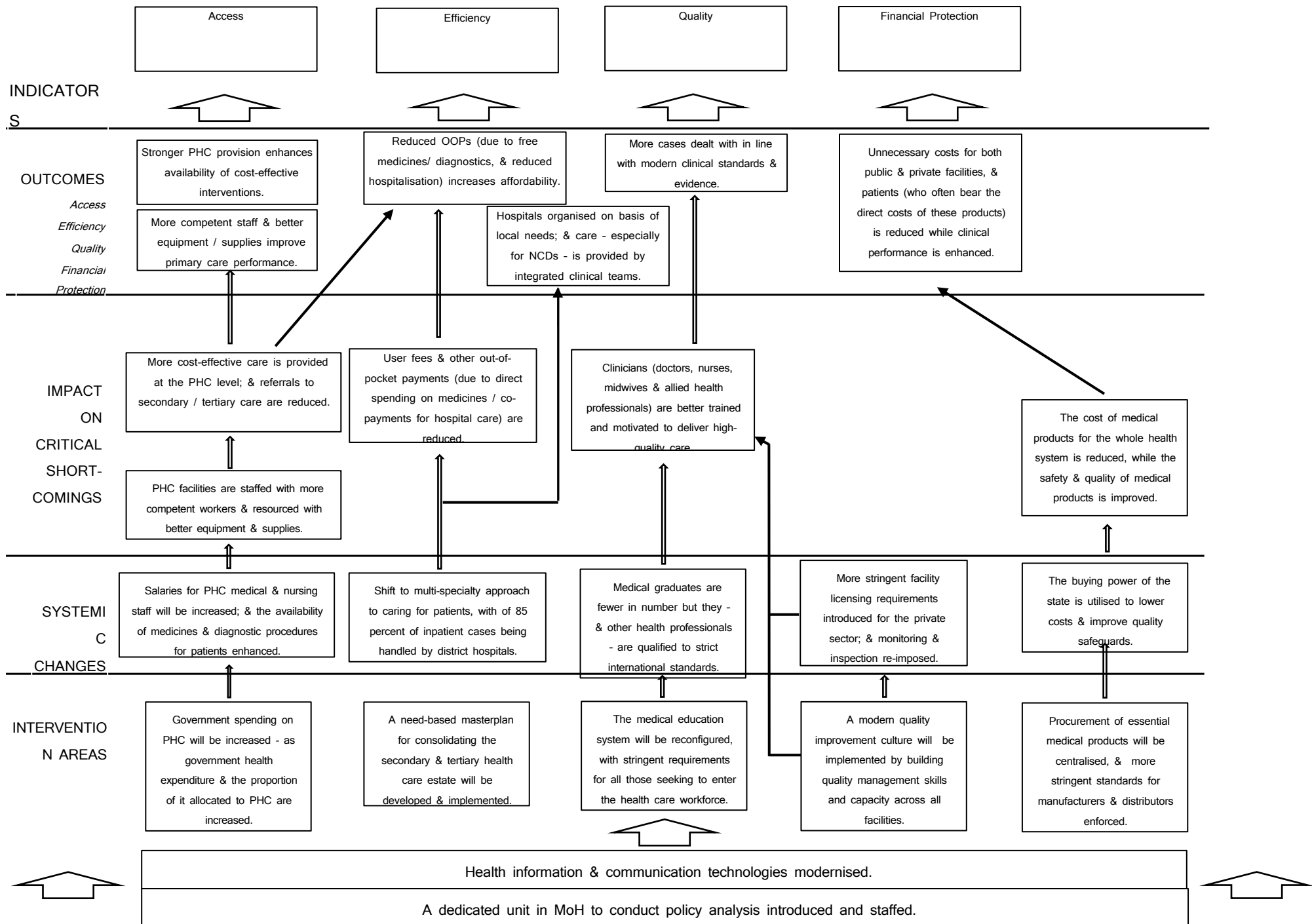
**...results from**

Addressing critical shortcomings through system-level changes to *inter alia* financing, service delivery, digital health, human resources, governance, procurement, public health, and quality improvement.

**...which arise from**

Intervention areas targeting financing, service delivery, digital health, human resources, governance, procurement, public health, and quality improvement.

...which give us the logical focus for  
the package of integrated reforms articulated in this Concept and accompanying Roadmap to  
transform human resources, primary care, secondary and tertiary care, and modernize the  
Ministry of Health.



## Strategic objectives and specific actions

The strategic objectives and specific actions to be implemented under the proposed National Health System Strategy 2030 are as follows:

A cross-cutting objective of *the Strategy* is to enhance the accessibility, efficiency, and appropriateness of the care available for the population. To realize this, the financial, technical, and human resources of the health sector need to be re-oriented towards primary care (family medicine clinics and district hospitals) driven health care delivery architecture (Figure 1) - such that, by 2030, in the public sector:

- 80 percent of outpatient contacts will take place at family medicine clinics, 85 percent of inpatient/day surgery care will be delivered in district hospitals, 10 percent in regional multi-disciplinary general hospitals and 5 percent at tertiary and quaternary care facilities or centers and bring the care closer to the patient. This is compared to just 50 percent of outpatient contacts provided at family medicine clinics, approximately 75 percent of inpatient care delivered at district hospitals, 9 percent at regional general hospitals, and 16 percent at tertiary and quaternary facilities, in the current health system set up;
- at least, for 50 percent of the care provided at the primary care level, electronic centrally aggregated data on quality of care exists, and the care provided meets the minimum quality care standards as defined by current international clinical guidelines adapted to Uzbekistan's context; and
- services provided in the public sector at the primary care level remain free or low-cost compared to other levels of care and in the private sector.

Achieving this will require a number of specific actions to be implemented. Some of these relate to the way that services are organized in the country, including a clear vision for what packages of care are to be delivered at what levels in the public health care system (Figure 1).

Key among these actions are the following:

- Clearly defined **service packages** will be developed for district, regional and national hospitals - to inform investments in district and regional general hospitals, with a goal of 85 percent of inpatient cases being handled by district hospitals.
- A **masterplan** for re-configuration of the health care estate will be developed and implemented. This will lead to: concentration of secondary and tertiary care in general hospitals; cancelling investments in regional specialist care hospitals; and building new, modern family medicine clinics and district hospitals (using standardized designs in line with international outpatient clinic and hospital design standards).
- Increase capital investment in primary care facilities (family doctor posts, family polyclinics, and district hospitals), ensuring that the infrastructure and equipment needed to deliver the state-guaranteed benefit package is in place – and all related products and services available in full, for free, to all residents in need of them, to support the goal of ensuring that 80 percent of overall outpatient patient contacts and 85 percent of inpatient admissions can take place at the PHC (district or city) level.
- The referral system will be strengthened – learning from the Syrdarya pilot – so that all patients need to have a referral from the primary care level before receiving free care at a secondary or tertiary care level facility.
- District multi-disciplinary polyclinics and district hospitals will be jointly managed to improve availability of specialist care and reduce tiering in primary care.
- Laboratory and diagnostic services will be centralized at the district (hospital) level with appropriate transportation logistics and information technology systems, to reduce prices of diagnostic procedures, to minimize duplicate testing, and to enhance their quality and timeliness.

To support these actions, the financial resources available *to the health sector in general*, and *to the primary care level in particular*, will be increased, enabling a phased approach to full funding of the State-Guaranteed Minimum Package, covering all included services, diagnostics, and medicines, and improved remuneration of primary care doctors and nurse practitioners.

This will involve a number of key actions, focused on changing health financing arrangements, among them:

- Realizing and maintaining the commitment to allocate **15.4 percent** of general government expenditure to the health sector will increase Government health expenditure by an estimated additional 45 trillion to 77 trillion UZS by 2030 (in 2021 prices) to be mobilized to support this Strategy implementation.

- In recognition of the role of government in achieving equitable access to care, and to avoid confusion about the body's function in the health system, the title of the State Health Insurance Fund will be changed to the "State Health Fund".
- **Salaries for primary care staff** (starting with FM clinics) will be increased to starting salary of equalling to no less than twice the average national salary for physicians and no less than an average national salary for nurses, supported by higher, earmarked funding of primary care facilities by central government.
- Financing mechanisms for hospitals will be transformed – shifting from input-based to other forms of payment such as **case-based** payments for all national and regional facilities regardless of source of funds (i.e. state funding or private funding in the form of user fees) – and there will be additional investment in the human resources and information systems required to monitor the service volumes and outcomes related to the case-based payments.
- New provider payment mechanisms will be established for **provider-to-provider tele-consultations**, outpatient consultations and day-care procedures at hospitals.

In addition, to address the aforementioned weaknesses in quality of care, new mechanisms for adaptation of international clinical practice guidelines will be developed, to simplify and expedite the alignment of national clinical guidelines to international standards, while adherence to them will be enhanced through quality improvement interventions with proven effectiveness in each public facility.

This will involve a number of key actions / requirements, among them:

- New clinical practice flowsheets for not less than ten conditions will be developed and integrated into routine documentation in outpatient primary care.
- A national list of quality-of-care indicators and reporting framework will ensure each health facility receives key information to manage quality.
- A new health information unit will be established to routinely collect quality-of-care data from all facilities (public and private), setting standards, verifying data quality, certifying data collectors, generating reports and analyses.
- Patient experience and workforce surveys will be introduced, and patient complaints management will be standardized and delegated as much as possible to facilities.
- A quality improvement hubs will be established to create training programs in modern improvement methods and manage national quality campaigns for high-priority conditions.
- All health facilities will have at least one staff with basic quality training, and districts will be required to have a designated paid quality focal point and a quality improvement team.
- Decision support tools, such as algorithms, standard order sets, and reminders, will be introduced to help providers remember to follow practice guidelines.

Alongside this, information and communication technologies will be modernised to enable the required digital transformation of the health sector in Uzbekistan. Under a comprehensive package of actions to enhance e-health, faster, more reliable, and action-oriented administrative and clinical data and data exchange will be achieved to empower health care providers, managers, and administrators to improve care and outcomes. Key actions include the following:

- National patient, facility, and provider registries that include all residents, healthcare facilities (including all public and private facilities), and health workers will be created.
- Digital transformation of public health facilities' administrative processes and key clinical processes will be accomplished.
- The National Chamber of Innovative Healthcare, under the MoH, with support from the Ministry for the Development of Information and Communication Technologies, will establish a clear and transparent universal certification process, building on international best practices (e.g., the Office of the National Coordinator for Health Information Technology Health IT Certification Program in the USA), for health information software used in health facilities to foster quality and innovation through the better and equal engagement of the public and private sector.
- Diagnostic image archives (PACS) in health facilities will be piloted and rolled-out to ensure long-term storage and exchange and remote access to the diagnostic images.
- Provider-to-provider tele-consultation solutions will be implemented.

- A new earmarked fund for recurrent maintenance of ICT hardware and software in primary care facilities will be introduced.
- All clinical facilities (public and private, primary care and hospitals) will be required to electronically share a minimum set of required data for each outpatient care encounter and hospitalization, to help form a longitudinal electronic patient health record and routine reporting to the newly established health information unit.

In addition, major improvements in the regulatory framework for the manufacturing, distribution, and marketing of pharmaceuticals and medical devices will be introduced. This will involve a number of key actions, among them:

- The licenses of all local pharmaceutical manufacturing companies in Uzbekistan that fail to comply with National GMP Guidelines will be revoked by December 31, 2023.
- An independent Medicines Regulatory Authority will be established by transforming the State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment.
- The licenses of all distributors of medical products in Uzbekistan that fail to comply with good distribution and good storage practices will be revoked;
- The prices of drugs paid by the public sector will be reduced by centralizing procurement of medical products for public facilities - or negotiating fixed price framework contracts with distributors.
- Direct-to-consumer marketing and advertisement of prescription medical products will be banned.

To drive forward improvements in the quality of care, especially at the PHC level, the human resources available in the health system will be brought up to international standards. In particular, the medical education system will be re-configured and strengthened – focusing on producing clinicians that are competent in their practice, equipped to facilitate task shifting, and the system able to conduct research of genuine value for the local health system. This will involve a number of key actions, among them:

- All medical students will be required to get IFOM Clinical Science Exam (or other rigorous international clinical exams approved by the MoH) passing grade before graduation; and passing IFOM Basic Science Exam (or other rigorous international basic science exams approved by the MoH) for promotion to clinical year (4th) training.
- Annual admissions of students (apart from those pursuing a public health speciality) will be limited to a maximum of 300 per institution per year; and the graduation class to a total of 300 per year (including both national and international graduates), and to offset the financial losses resulting from lower tuition fees (both state- and self-funded), state tuition grants to new and existing public medical schools will be increased.
- Six new medical schools will be established in regions. Regional and district hospitals will serve as clinical training sites for year 4, 5, and 6 students.
- A mandatory process for licensing and renewal, based on required Continuing Professional Development hours, every five years for each healthcare profession will be established.
- The bedside teaching role for faculty will be modified so that they spend at least two hours a day with students in bedside teaching in no more than 4:1 student to faculty ratio on clinical rotations.
- In collaboration with international medical schools, Departments of Family Medicine will be established in each Medical School.
- English reading proficiency (TOEFL reading score of 20 or above; IELTS reading score of 6 or above) will be required for advancement to year 4 clinical training.
- Departments of Clinical Epidemiology and Implementation Science will be established in five large medical schools as joint programs with international universities.
- At least 20 percent of the national medical research budget or at least 5 percent of the Fund for Financing Science and Support of Innovation will be allocated to support clinical study design, clinical epidemiology and implementation science research and faculty training.
- At least, on average, one day per week in higher health care education institutions will be fully devoted to research. Research publication costs will be paid by educational institutions.

Finally, the Strategy will ensure that adequate organizational capacity is in place to implement the strategic functions of a modern MoH, particularly with regard to the private health sector. To this end, a number of key reforms will be implemented, among them:

- Introducing, as a condition of licensing for both new and renewing applicants, a requirement for private facilities to share electronic health information data in line with minimum data submission requirements in the public sector, while tax offices will provide, on a quarterly basis, the MoH with specific information on the types, volumes, and prices of medical services provided by private facilities/ entities.
- Revising the existing licensing requirements to align with international norms and making them required for all facilities (public and private).
- Strengthening the licensing process, ensuring that all active facilities / providers are licensed for the full range of services they provide, and that the MoH / regulators have the staffing capacity, access to information and the powers required to conduct inspections and monitoring to ensure compliance with revised licensing requirements, cancelling the current “moratorium” on these activities.
- Shifting MoH/State Health Insurance Fund practice from *ad hoc* to *strategic* purchasing of private sector capacity – with all new contracts focused on delivery of services within the state-guaranteed package for which public sector capacity is limited or of insufficient quality – and ensuring *additionality* (such that contractors are not allowed to draw on public sector capacity in staffing, equipment, or buildings to deliver contracted services), *efficiency* (i.e., contractors receive competitively determined payments that must be no higher than those for public facilities for equivalent service packages / volumes), and *service quality* (contracts must not be entered into without specifying key performance indicators as well as service volumes, and having sufficient capacity to monitor results against these).
- Reflecting the MoH’s emerging role in governance of the “mixed” (public plus private) health system, it will convene industry stakeholders to establish an Association of Private Medical Institutions - to represent the legitimate voice of the private sector in dialogue with government/ MoH on an ongoing basis.
- Introducing a moratorium on large-scale capital-intensive public-private partnerships, such as those for new district / regional hospitals, until the above-mentioned masterplan for the re-configuration of the health care infrastructure of the Republic has been completed and approved; such that public-private partnerships and other forms of capital asset procurement can be targeted at the highest priority investments.

Figure 1. Proposed health care delivery architecture in the public sector

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Tertiary and quaternary outpatient and inpatient care</p>	<p><b><u>Selected national specialty center or national excellence centers within vilovat or city general hospital:</u></b></p> <p><i>Outpatient department</i> – specialists</p> <p><i>Inpatient departments</i> – emergency care, maternity, cardiology, urology, oncology, dermatology, ophthalmology, neurosurgery, etc.</p> <p><i>Diagnostics department</i> – laboratory, radiology, and other types of diagnostics</p>	<p>5 percent of inpatient/day surgery care in the public sector</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Secondary outpatient and inpatient care</p>	<p><b><u>Vilovat or city general hospital:</u></b></p> <p><i>Outpatient department</i> – specialists</p> <p><i>Inpatient departments</i> – emergency care, maternity, cardiology, urology, oncology, dermatology, ophthalmology, neurosurgery, etc.</p> <p><i>Diagnostics department</i> – laboratory, radiology, and other types of diagnostics</p>	<p>10 percent of inpatient/day surgery care in the public sector</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Primary specialty outpatient and inpatient care</p>	<p><b><u>District general hospital:</u></b></p> <p><i>Outpatient department</i> – Family medicine physician with sub-specialty, specialists</p> <p><i>Inpatient departments</i> – internal medicine, emergency care, maternity, general surgery and trauma, pediatrics, infectious diseases, ophthalmology</p> <p><i>Diagnostics department</i> – laboratory, radiology, and other types of diagnostics</p>	<p>At least 85 percent of inpatient/day surgery care in the public sector</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Primary care</p>	<p><b><u>Family medicine polyclinic:</u></b> Family medicine physicians, practicing nurses, mid-wives, general/patronage nurses</p> <p><b><u>Family medicine points:</u></b> Family medicine physician, practicing nurses, mid-wife, general/patronage nurses</p> <p><b><u>FM nurse points reporting to FM physicians in FM polyclinics or points:</u></b> Practicing nurse, mid-wife, general/patronage nurse</p>	<p>At least 80 percent of overall outpatient contacts in public sector</p>

## Part 2, Section 2. Consolidated Roadmap

# A Roadmap for the National Health System Strategy for Uzbekistan:

**40** actions in **4** key focus areas  
to transform health system performance

## INTRODUCTION

Health care systems are complex with many interacting components. If not approached in a comprehensive and integrated way, the impact of even well-designed reforms will be limited. The proposed National Health System Strategy for Uzbekistan (henceforth: *the Strategy*) outlines a comprehensive series of reforms that will collectively transform the structure, operations and performance of the health system by 2030, delivering better quality of care, greater operational efficiency, enhanced access to care for patients, improved service coverage for the population and a healthier work-life balance for health professionals. The Strategy is based on a comprehensive situation analysis of the most pressing problems faced by the health system, alongside a diagnostic analysis of the root causes of these problems, and evidence-based analysis of the most promising methods for addressing them. The reforms outlined in the Strategy relate to four prioritized focus areas, namely:

- i. Creation of a health care workforce that meets international standards;
- ii. Transformation of health service delivery at the district level;
- iii. Transformation of service delivery at the secondary and tertiary levels, in the public and private sectors; and
- iv. Modernization of the Ministry of Health, as the overall “steward” of the health system, ensuring that its activities are *transparent, strategic and effective*.

This *Consolidated Roadmap* describes the specific reforms to be advanced under each of the four focus areas. In each case, the nature and impact of the key performance challenge are identified, and the proposed solutions and intended outcomes defined, alongside an account of the international evidence of best practices underpinning those solutions and outcomes. Where possible, *indicative* capital and recurrent expenditures relating to each reform are provided for information purposes, and key milestones on the pathway to full implementation and scale-up are recorded.<sup>1</sup>

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<sup>1</sup> Estimates are based on available data and expert opinion, and further analysis would be required to achieve accurate costs.

## FOUR KEY FOCUS AREAS AND 40 SPECIFIC REFORMS

### FOCUS AREA 1: Creation of a health care workforce that meets international standards

Reforms in this focus area will address critical shortcomings in the competences of health professionals in Uzbekistan, thereby contributing to the improvement of the quality of health care available to the population. The shortcomings to be targeted include the following:

- An inappropriately low number of faculty relative to the number of students, reducing the quality of clinical training for medical students.
- The absence of competency-based training for medical students, underpinned by outdated “lecture-based” teaching and learning strategies.
- Limited clinical competencies among nurses, reducing quality of care and efficiency, e.g. by impeding task shifting within family medicine facilities.
- The lack of national qualifying exams for each health professional cadre, such that the competencies of newly qualified staff are never adequately assessed.
- The absence of re-certification processes for physicians, nurses, pharmacists and dentists, such that the extent to which in-service staff have up-to-date clinical knowledge and skills is uncertain, and not assured.
- The under-development of clinical epidemiology and implementation science - in which medical schools have the capacity to make a contribution that is impactful, internationally, and has the potential to improve services in Uzbekistan specifically.

In response to these performance challenges, the National Health Systems Strategy includes specific reforms that will:

- Increase the number of faculty relative –to the number of -students, reducing the number of new admissions, as part of new licensing / accreditation criteria for medical schools.
- Introduce competency-based training for all medical students, underpinned by institutionalization of international core competence frameworks into medical education.
- Expand clinical competencies among nurses, including robust nursing education, consistent with regulated standards under European Union Directive 2005/36/EC.
- Establish new national qualifying exams for each health professional cadre, such that the competencies of new graduates are properly assessed before entry to practice.
- Introduce re-certification processes for physicians, nurses, pharmacists and dentists, such that the competencies of in-service staff are properly assessed on a continuous basis.
- Re-allocate research and development funds to invest in clinical epidemiology and implementation science, establishing Uzbekistan as a global leader in these disciplines.

Below, these critical shortcomings and proposed reforms are described in greater depth, alongside an account of the international evidence of best practice that underpins the reforms, the estimated capital and recurrent expenditures needed to achieve them, and the key roadmap milestones.

## Focus Area 1: CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS

### No.1: Enhance pre-service training in medical schools to meet international standards

#### Problem:

The number of government-approved places (4,175 in 2021) in public medical schools is expected to generate approximately 12 graduates per 100,000 population, placing Uzbekistan towards the higher end of the range for OECD countries (e.g., in Canada, it is 7.5 per 100,000 population, in the US 8.5 per 100,000, in the UK, 13.1 per 100,000, and in Australia 14.1 per 100,000).<sup>2 3</sup> However, public medical schools enrolled nearly 50 percent more medical students between 2017 and 2022 than the number planned by government - and did so without a commensurate increase in clinical teaching capacity. As a result, the number of graduates per 100,000 population in Uzbekistan will far exceed international norms.

In addition, in medical schools, a maximum ratio of 1:6 of faculty to students was established by Presidential Decree #2107 in 1998. However, almost all medical schools have now exceeded this ratio, as faculty numbers have increased at a far slower rate to that of student numbers. As a result, faculty-to-student ratios in Uzbekistan are now extremely high by international standards.

These ratios are of critical importance to the standard of medical education and training, especially in terms of clinical rotations in which students learn important clinical reasoning, problem solving and patient care skills. Inadequate numbers of available patients and faculty result in inappropriate teaching / training strategies – for instance, instruction often occurring in lecture or group discussion settings, and infrequent one-on-one bedside teaching. Based on questioning of young primary care physicians in Uzbekistan, it is apparent that Uzbek medical students receive only a small percentage, perhaps less than 25 percent, of the amount of one-on-one bedside teaching as do students in the countries of the EU and North America.

Faculty assessment and feedback to students on competencies other than simple knowledge of facts requires faculty time spent observing students individually in patient care settings. Yet this kind of training is weak in Uzbekistan. As a result, there are widespread complaints that new medical graduates do not have the competencies necessary to function as effective physicians, even at the primary care level. Students typically observe rather than actively care for patients during their medical school training. The most important component of the clinical years of medical school is the clinical rotation – often referred to as the "clerkship", or "practical" aspect of training which follows preclinical training.

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<sup>2</sup> <https://lex.uz/docs/5472291>

<sup>3</sup> <https://data.oecd.org/healthres/medical-graduates.htm>

In Uzbekistan, this occurs mostly in years 4, 5 and 6, and offers limited opportunities for students to do initial evaluations of patients and follow them through.

Newly graduated physicians are also limited by the absence of mandatory internships after medical school. A supervised internship following graduation was eliminated during the 1990s.

The level of English reading proficiency is far below universal among medical school graduates. As virtually all important biomedical research, and evidence based clinical guidelines and medical textbooks, are written in English, it is crucial for all physicians to be able to read English with confidence.

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### **Best practices:**

No top-ranked medical schools in the world graduate more than 300 students per year. For example, medical schools at the universities of Harvard and Columbia, in the US, annually admit approximately 160 and 140 students, respectively.<sup>4,5</sup> They have approximately 10,000 and 2,100 full-time teaching faculty, respectively.

Internationally, the ratio of medical school faculty to students varies, but generally within the range of 1.2 – 1.6 (specifically, 1:2 in the USA; 1:3 in the European Union; 1:3 in India; 1:4 in the Eastern Mediterranean and Central Asian regions (pre-2000); and 1:6 in Africa).<sup>6,7</sup>

In OECD countries, students in clerkships, under the direction of an experienced practitioner, are assigned responsibility for patients in various medical specialties where they do initial evaluations of patients and follow them through the hospitalization taking an active role in monitoring and providing care. Closely supervised internship experiences after graduating medical school and lasting at least a year are standard in all EU and North American countries, as well as in Australia, South Korea, and Japan.

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### **Solution:**

Set new licensing and accreditation criteria for all medical schools in Uzbekistan (private and public) that require:

- Annual admissions and graduation of local and international medical students (except public health) to be capped at a maximum of 300 per medical school.
- Reduced faculty-to-student ratios – ultimately to 1:4 - in clinical rotations in years 4 and 5 (with no hard caps on faculty-to-student ratios in pre- or non-clinical rotations/classes).
- Students to obtain minimum reading comprehension in English (equivalent to a TOEFL iBT score of 20) before being allowed to enter clinical training in year 4.

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<sup>4</sup> <https://www.vagelos.columbia.edu/about-us/facts-and-statistics>

<sup>5</sup> <https://hms.harvard.edu/about-hms/facts-figures>

<sup>6</sup> AAMC Faculty Roster. Table 2: Distribution of U.S. Medical School Faculty by School and Department Type, Dec. 31, 2014. <https://www.aamc.org/download/420610/data/14table2.pdf>.

<sup>7</sup> WHO. 2001. *A VIEW OF THE WORLD'S MEDICAL SCHOOLS. Defining new roles.* Available at: <https://www.iaomc.org/WHOREptMedSchools.pdf>

- All courses to contain English language learning material produced for medical schools in countries like Australia, North America or Western Europe.
- All students to participate in management of at least three hospital patients per week and three ambulatory patients per day on clinical hospital and outpatient rotations, respectively, on a one student per patient basis in years 4 and 5.
- Faculty to spend at least two hours per day with students in bedside teaching, in no more than 4:1 student to faculty ratio on clinical rotations in years 3, 4 and 5.
- All students to undertake a paid internship in family medicine polyclinics in year 6, with documented supervised management of at least six patients per student per day.
- Family polyclinics to have family medicine residency program graduates as clinical instructors to be eligible to accept interns.
- Clinical faculty, including non-academic clinical instructors, to receive at least 2 hours per year of learning in bedside and small group teaching.

Also, the MoH to:

- Establish and require a paid internship year (focused on supervised clinical practice) in family medicine polyclinics and district hospitals for year 6 students before they are licensed to practice independently.
- Establish paid internship positions in family medicine polyclinics and district hospitals that meet the minimum requirements for supervised clinical practice. Medical schools will transfer funding to family medicine polyclinics to cover intern salaries.
- Double the grant amount paid to medical schools for each student (to compensate for the financial losses associated with the reduction of student pool, and internship salaries).
- Establish additional regional medical institutions with intakes of 150-200 students per year.
- Establish paid clinical instructor positions in relevant medical school departments for clinicians, supporting supervised clinical practice for students and residents.

**Intended outcome:**

All new medical graduates possess essential clinical knowledge and skills that meet international standards.

<b>One-time investments:</b>	Not applicable	<b>Recurrent expenditures from the state budget:</b>	Approximately US\$ 10 million per year (given ≈1,800 state-funded medical students per year and six-year medical education and ≈\$1,000 increase in tuition per year per student)
<b>2023</b>	New/updated licensing/accreditation	<b>2027</b>	

regulations are introduced that require:

i) Annual admissions of local and international medical students are capped at 500 per medical school.

ii) A faculty-to-student ratio of no more than 1:6 in clinical rotations in years 4 and 5.

iii) All students have a level of English-language reading comprehension equivalent to a TOEFL score of 15 (as measured by TOEFL or another commonly used international test) before they are eligible to advance to clinical training.

iv) Faculty spend at least two hours a day with students in bedside teaching in years 4 and 5.

v) All students participate in management of at least three new patients per week on inpatient services and three patients per day on outpatient clinical rotations on a one student per patient basis in years 4 and 5.

vi) All courses to contain English language biomedical research/learning/reading material produced in an OECD country.

vii) All clinical faculty, including community non-academic clinical instructors, receive at least 2 hours per year of learning in bedside and small group teaching.

2024

Updated licensing/accreditation regulations are introduced that require:

2028

i)Annual admissions of local and international medical students are capped at 400 per medical school.

ii)A 1:5 faculty-to-student ratio in clinical rotations is achieved for students in years 4 and 5.

iii) All students have a level of English-language reading comprehension equivalent to a TOEFL score of 18 (as measured by TOEFL or another commonly used international test) before they are eligible to advance to clinical training.

iv) All students undertake a paid internship in family medicine polyclinics in year 6 with documented supervised management of at least 6 patients per intern per day.

In addition, the grant amount per medical student is increased by 40% adjusted for inflation, funded by the state budget.

Two new regional medical schools are established.

**2025**

Updated licensing/accreditation regulations are introduced that require:

i)Annual admissions of local and international medical students are capped at 300 per medical school.

ii)A 1:4 faculty-to-student ratio in clinical rotations is achieved for students in years 4 and 5.

iii)A minimum reading comprehension competence equivalent to a TOEFL score of

**2029**

20 as measured by a commonly used international language test is a requirement for students to be eligible to advance to clinical training.

Family polyclinics have family medicine residency program graduates as clinical instructors to be eligible to accept interns.

The grant amount per medical student is increased by 40% adjusted for inflation, funded from the state budget.

Two new regional medical schools are established.

2026

Updated licensing/accreditation regulations are introduced that require:

i) All students undertake a paid internship in family medicine polyclinics and district hospitals in year 6 with documented supervised management of at least 6 patients per intern per day.

Two new regional medical schools are established.

2030

**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

**No.2: Introduce a competency-based curriculum in medical education, expanding this to other health professions over time**

**Problem:**

The medical education system in Uzbekistan is based on a subject-centered and time-based (rather than competency-based) curriculum, in which evaluations are summative and there is limited opportunity for feedback. The curriculum focuses on students' acquisition of *knowledge*, such that

students develop relevant knowledge, but lack the basic *clinical, communication, and ethical skills* essential for independent practice.

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### **Best practices:**

In well-performing health care systems, competency-based curricula – which prioritize the development of core competencies, such that learning continues until the desired competency is obtained, rather than being time-based – are the norm for medical students, and are becoming more common for other health professional cadres also. In such curricula, assessments are frequent and formative in nature, and feedback is built into the training process.

In the US, Canada, and many countries in Western Europe, competency-based education in postgraduate medical education is established, and implementation in undergraduate medical education is in development.<sup>89</sup> Well-known frameworks for this are the American College of Graduate Medical Education Core Competencies (US), the Generic Professional Capabilities Framework (UK), and CanMeds (Canada).

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### **Solution:**

Universities in Uzbekistan to:

- Engage in long-term partnerships with international medical schools, to strengthen faculty capacity to design and implement competency-based curricula, pedagogy and assessment.
  - Revise state educational standards and define a curriculum for a residency program in family medicine using international core competence frameworks.
  - Pilot a competency-based curriculum for a residency program in family medicine in three medical schools, and then scale this to all family residency programs in the country.
  - Revise state educational standards and the curriculum for clinical years (4, 5 and 6) to refocus on core competencies.
  - Pilot a competency-based curriculum for clinical years in three medical schools and scale to all medical schools.
  - Building on the experience from the medical schools, revise the state educational standards and the curricula for nursing, dentistry, pharmacy and public health.
  - Pilot competency-based curricula in selected nursing, dentistry, pharmacy and public health schools, and then scale nationwide.
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### **Intended outcome:**

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<sup>8</sup> Veale, Pamela MD; Busche, Kevin MD; Touchie, Claire MD; Coderre, Sylvain MD; McLaughlin, Kevin PhD. Choosing Our Own Pathway to Competency-Based Undergraduate Medical Education. *Academic Medicine*: January 2019

<sup>9</sup> Ryan MS, Blood AD, Park YS, Farnan JM. Competency-Based Frameworks in Medical School Education Programs: A Thematic Analysis of the Academic Medicine Snapshots, 2020. *Acad Med*. 2022 Nov.

New medical graduates entering the workforce have the core competencies required to provide high-quality care. The workforce has advanced clinical reasoning and problem-solving skills (including the kinds of clinical reasoning and problem-solving skills that cannot be taught in a classroom or by walking through a hospital with a faculty member).

<b>One-time investments:</b>	US\$ 2,000,000 to support long-term partnerships with international medical schools International experts	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	Engage for long-term partnerships with at least two international medical schools with rigorous competency-based programs for curriculum development and faculty training.	<b>2027</b>	Pilot competency-based curriculum for clinical years in three medical schools.
<b>2024</b>	Develop a revised state educational standard and competency-based curriculum for a residency program in family medicine.  Pilot competency-based curriculum for a residency program in three medical schools.	<b>2028</b>	Scale to all remaining family residency programs in the country.  Scale new curriculum to additional two medical schools.  Develop a revised state educational standard and competency-based curriculum for nursing, dentistry, pharmacy and public health.
<b>2025</b>	Develop a revised state educational standard and competency-based curriculum for clinical years (4, 5 and 6) in medical schools.	<b>2029</b>	Scale new curriculum to all remaining medical schools  Pilot competency-based curricula in selected nursing, dentistry, pharmacy and public health masters programs.

<p><b>2026</b> Scale to two additional family residency programs in the country. Pilot competency-based curriculum for clinical years in three medical schools.</p>	<p><b>2030</b> Scale competency-based curricula in selected nursing, dentistry, pharmacy and public health masters programs.</p>
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**Focus Area: CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS**

**No.3: Reorganize and improve mid-level health professional training to meet international standards**

**Problem:**  
 The number of nurses for the population is high in Uzbekistan in comparison with international norms – there are 10 nurses per 1000 population compared to an average 8.8 nurses per 1,000 population in OECD countries. However, most nurses are “practical nurses”, and, as such, have limited clinical competencies. They cannot and do not provide nursing care according to international standards.

There are almost 300,000 nurses working in Uzbekistan, but only 2800 are bachelor-trained and meet the “registered nurse” requirements, suggesting that almost 99 percent of nurses in Uzbekistan are unable to function at the competence level of those in OECD countries. It is notable, also, in relation to midwives, that 83 percent of countries report the training of midwives to be at least three years in duration, which is not the case in Uzbekistan.<sup>10</sup>

Further, the current educational system for mid-level health care workers in Uzbekistan is structured so that there are no education or career options to proceed for mid-level professionals in midwifery, physiotherapy, laboratory and radiography technicians. Effective care and rehabilitation necessitate a multidisciplinary workforce.

Nursing and other mid-level professions should be taught by nurses and / or the respective professional representatives. This is the standard in the countries of the EU and North America. In Uzbekistan, physicians are responsible for nurse and other mid-professional training, partly because numbers of academic nurses and other mid-professionals are inadequate to teach the numbers of students on relevant programs.

**Best practices:**  
 The majority of nurses in OECD countries, including those in the countries of the EU and North America, are trained to a registered (licensed) nurse standard or above, and are capable of extended clinical roles compared to Uzbek nurses.<sup>11</sup> Many countries have succeeded in raising the educational

<sup>10</sup> UNFPA. 2021. The State of the World’s Midwifery 2021.

<sup>11</sup> OECD. 2021. Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/59aa8c9c-en>.

level and roles of nurses to meet EU and North American standards, enabling them to do far more than serve as doctors' assistants.

Internationally, non-medical health professionals have a career path that can lead to various advanced degrees. The EU Bologna process, to which Uzbekistan is a signatory, contains a principle of lifelong learning in which each professional has the pathway to a doctoral degree. Correspondingly, in OECD countries, mid-level professionals have appropriate positions, qualifications and remuneration consistent with a postgraduate educational level.

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**Solution:**

Reorganize the current nursing profession, roles, positions and remuneration levels into three groups: i) the practical nurse, also known as the licensed practical nurse (LPN), focused on the provision of basic care, ii) the nurse responsible for general patient care, also known as the registered nurse (RN)), and iii) the specialist nurse, with a bachelor's degree in nursing science.

Establish that: i) two-year technicum level programs lead to qualification as a licensed practical nurse, ii) three-year technicum level programs lead to qualification as a licensed general care nurse (equivalent to an RN in Europe), and iii) four-year university-level programs lead to qualification as a licensed general care nurse (RN) in addition to a specialist qualification (in midwifery, family nursing, emergency nursing etc.).

Reorganize four-year university-level nursing education programs to admit students directly after 11 years of general education without requiring graduation from a technicum program.

Establish fast-track options for graduates of three-year nursing technicum programs to obtain university degree and specialization in nursing.

Establish education and career path leading to Masters and Doctoral degrees in non-medical (non-physician) mid-level professions.

Develop, with international expert support, harmonized curricula, meeting EU Directives and other international standards for each nursing level.

Establish at least two 2 joint bachelor and masters programs with leading foreign universities for capacity building of faculty for training in nursing, laboratory nursing, midwifery, physiotherapy, and radiology.

Ensure a phased transition from physician faculty to nurse faculty with Masters and Doctoral degrees in all areas that do not require physician-level input in nursing education.

Increase the number of state-funded nursing Masters and Doctoral positions.

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**Intended outcome:**

Uzbekistan's mid-level professional education and career paths are aligned with international practices to provide expanded roles and career opportunities.

<b>One-time investments:</b>	US\$ 2,000,000 to support long-term partnerships with international medical schools International experts	<b>Recurrent expenditures from the state budget:</b>	Not applicable
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<b>2023</b>	<p>Reorganize the current nursing levels into three levels: i) the practical nurse also known as the LPN or licensed practical nurse, ii) a nurse responsible for general patient care (also known as the RN or registered nurse), iii) a specialized nurse with bachelor's degree in nursing science</p> <p>Establish that i) two-year technicum level programs lead to licensed practical nurse qualification, ii) three-year technicum level programs lead to qualification as a licensed general care nurse (equivalent to a registered nurse (RN) in Europe), and iii) four-year university level programs lead to simultaneously to both a licensed general care nurse (RN) and a specialist qualification (midwife, family nurse, emergency etc.).</p> <p>Develop, with international expert support, harmonized curriculum meeting EU</p>	<b>2027</b>	<p>Establish at least two (2) joint bachelor and master programs with leading foreign universities for capacity building of faculty for training of physiotherapists, laboratory and radiology technicians in line with the new curriculum.</p> <p>Establish the number of state-funded physiotherapists, laboratory and radiology technicians (i) technicum and (ii) bachelor positions in the joint degree programs at least at 40 for technicum and 20 for bachelor in each area</p> <p>Scale the revised nursing curriculum to nursing schools in six regions.</p>
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	Directives and other international standards for each level.		
<b>2024</b>	<p>Establish at least two (2) joint bachelor and master programs with leading foreign universities for training of nurses and midwives in line with the new curriculum.</p> <p>Reorganize four-year university-level nursing education programs to admit students directly after 11 years of general education without requiring a technicum program.</p> <p>Establish within the four-year university-level nursing education programs fast-track options for graduates of three-year technicum programs to obtain a university degree and a specialization.</p> <p>Ensure the number of state-funded nursing (i) traditional and (ii) fast-track bachelor and masters positions in joint degree programs to be at least at 40 and 20, respectively.</p>	<b>2028</b>	<p>Scale the revised nursing curriculum to nursing schools in remaining regions.</p> <p>Increase the number of state-funded physiotherapists, laboratory and radiology technicians (i) technicum and (ii) bachelor positions in the joint degree programs at least at 80 for technicum and 40 for bachelor in each area.</p>
<b>2025</b>	Increase the number of state-funded nursing (i) traditional and (ii) fast-track bachelor and masters positions in the joint degree programs to at least 80 and 40, respectively	<b>2029</b>	Scale the revised physiotherapy, laboratory and radiology technician curriculum to nursing and medical schools in six regions.
<b>2026</b>	Reorganize the current physiotherapists, laboratory and radiology technician levels	<b>2030</b>	Scale the revised physiotherapy, laboratory and radiology technician

into two levels: i) the technicum, and ii) bachelors.

curriculum to nursing and medical schools in remaining regions.

Develop, with international expert support, harmonized curriculum meeting EU Directives and other international standards for physiotherapists, laboratory nurses, and radiology technicians.

Scale the revised nursing curriculum to nursing schools in two regions.

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**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

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**No.4: Establish at least two joint family medicine residency programs with international medical schools from countries with rigorous medical training programs**

**Problem:**

In Uzbekistan, family medicine has not been established as a specialty of equal prestige to that of other disciplines. Hence, advanced training for primary care practitioners has not been a focus for medical educational institutions in Uzbekistan. Physicians that wish to undertake additional clinical training or career advancement are forced into specialties. A limited, 10-month family doctor retraining for specialists program does exist, but this is inadequate, and has failed to establish family medicine as an attractive career for physicians.

Earlier attempts to establish clinical residency training programs failed because of limited career prospects for well-trained family doctors. Salaries and non-financial benefits for primary care physicians do not reward those with additional clinical training after medical school graduation. As a result, there are virtually no residency-trained family physicians in Uzbekistan.

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**Best practices:**

The situation with regard to the training of primary care physicians in Uzbekistan differs markedly from that of most countries in the EU, and in North America – in which close to 100 percent of primary care physicians have had at least 3 years of post-medical school clinical training, and are

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board-certified in either Family Medicine, Internal Medicine (Therapeutics) or Pediatrics before they practice independently or without direct supervision.<sup>12</sup>

There are well established Family Medicine residency models in the UK, Australia, Canada, and the United States (amongst others) that Uzbekistan can and should emulate.

**Solution:**

Universities in Uzbekistan will:

- Engage for long-term partnerships with at least three international medical schools to enhance capacities to develop curricula for and implement family medicine residency programs.
- Develop a revised state educational standard and competency-based curriculum for a two-year residency program in family medicine.
- Establish at least three (3) joint residency programs (Masters-level) in family medicine following UK/Australian/Canada/US partner model.
- Build on the experience from the joint programs, and establish family medicine residency programs in all medical schools in the country.
- Allow medical students that wish to pursue a residency in family medicine to join the family medicine residency program from year 6 of medical school as an alternative to a one-year mandatory internship on year 6. These graduates of the family medicine residency program should receive both medical school and residency diplomas upon graduation.
- Require all family medicine department faculty to be graduates of a family medicine residency program.
- Develop a family medicine board exam for residency graduates modelled after international board exams in North America, Western Europe, Australia and others.
- Increase the number of state funded family medicine residency positions.

**Intended outcome:**

The share of family medicine residency trained physicians in family medicine clinics is increased.

<b>One-time investments:</b>	US\$2,000,000	<b>Recurrent expenditures from the state budget:</b>	US\$500,000 at US\$2,000 per resident for two years for 250 resident positions
<b>2023</b>	Engage for long-term partnerships with at least three international medical schools	<b>2027</b>	Develop a family medicine board exam for residency graduates modelled after international board exams.

<sup>12</sup> Arya N, Gibson C, Ponka D, Haq C, Hansel S, Dahlman B, Rouleau K. Family medicine around the world: overview by region: The Besroul Papers: a series on the state of family medicine in the world. Can Fam Physician. 2017 Jun;63(6):436-441. PMID: 28615392; PMCID: PMC5471080.

	with rigorous family medicine residency programs for curriculum development and faculty training.		The number of state-funded family medicine residency positions for annual intake is at least 150.
<b>2024</b>	<p>Develop a revised state educational standard and competency-based curriculum for a two-year residency program in family medicine.</p> <p>Establish at least two (3) joint residency programs (Master) in family medicine following UK/Australian/Canada/US partner model.</p> <p>The number of state-funded family medicine residency positions for annual intake is at least 20.</p> <p>Allow medical students willing to pursue a residency in family medicine to join the family medicine residency program from year 6 of the medical school as an alternative to one year mandatory internship on year 6.</p>	<b>2028</b>	<p>Pilot a family medicine board exam in three medical schools.</p> <p>The number of state-funded family medicine residency positions for annual intake is at least 200.</p>
<b>2025</b>	<p>Establish family medicine residency programs in all medical schools in the country modeled after joint programs</p> <p>The number of state-funded family medicine residency positions for annual intake is at least 40.</p>	<b>2029</b>	<p>Require passing score on a board exam for graduation from family medicine residency programs.</p> <p>The number of state-funded family medicine residency positions for annual intake is at least 250.</p>
<b>2026</b>	The number of state-funded family medicine residency	<b>2030</b>	Require no less than 80 percent of family medicine department faculty to

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positions for annual intake is at least 80.

be graduates of a family medicine residency program.

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**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

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**No.5: Introduction of national qualifying exams for all health professional cadres**

**Problem:**

Uzbekistan does not have objective qualification exams that meet international standards for health professional school graduates. As a result, there are no enforceable minimum standards that all health professional school students must meet in order to graduate. Most health professional schools train and also evaluate the fitness to practice of their students. However, they have a financial stake in this process, as student tuition fees are their main source of funding. Reflecting this issue, the majority, if not all, enrolled students successfully graduate.

In the absence of valid data, the competencies of new graduates are difficult to measure. However, evidence suggests that doctors and nurses who are trained in Uzbekistan face major difficulties in passing international-standard qualifying examinations. For example, among students educated in medical schools in countries that follow training programs similar to those in Uzbekistan (e.g. Kazakhstan, Ukraine, and Russia) and who has taken the Indian foreign medical graduate qualifying examination, only 1/6 achieve a passing grade.

The lack of rigorous qualification exams is particularly worrying in the context of recent changes in the higher education system in Uzbekistan. Over the past 2-3 years, universities have been given the freedom to set admission quotas and to engage in so-called “super contracts”, which allow them to enroll any person into a school upon paying a certain amount additional to the normal student tuition fee.

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**Best practices:**

Qualifying exams for medical schools and other health professional schools exist in many countries, including the USA, Canada, Great Britain, Germany, Finland, Japan, Korea, Malaysia, Türkiye, India, Poland, Sweden, Australia, New Zealand, Bahrain, and the UAE. These standardized qualifying exams help to set minimum competency standards among new medical graduates, as students must pass the exams to be eligible for graduation.

Globally, many national exam systems are based on the USMLE (United States Medical Licensing Examination) exam. A variation of this exam system is specifically designed for use at the international level and is modified according to the country’s needs; it is called the IFOM (International Foundations of Medicine) exam.

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IFOM consists of two parts. The first part is referred to as the Basic Science Exam (BSE), and is taken after the basic/pre-clinical years. The second part, the Clinical Science Exam (CSE), is taken before graduation. The IFOM exams are essentially shortened versions of the USMLE and about 40 percent of the questions are designed by an international panel. Passing scores are set by each country individually. In the US, this exam is usually administered on a computer with appropriate security measures. Evaluation and analysis are carried out by the National Board of Medical Examiners (NBME). The cost of taking one Basic Science Exam (BSE) per student is US\$50 while the Clinical Science Exam (CSE) is US\$75.

Similar national examination systems also exist for other professions - for nurses, and for graduates of dental and pharmacy schools. For example, the National Council of State Boards of Nursing (NCSBN) develops the NCLEX exam to test the competency of nursing school graduates in the US and Canada.

**Solution:**

Pilot IFOM CSE and BSE assessments among a sample of medical students in Tashkent. Building on the lessons learned from the pilot, scale the two exams to all medical universities in the country.

Require all medical students to take BSE and pass a minimum score for the transition to the clinical (4th) year of study and take CSE and pass a minimum score (set by the MoH) to graduate. A minimum passing score can initially be set at low levels and gradually increased over the years as medical schools revise their curriculum. Other rigorous international exams in basic and clinical sciences approved by the MoH should also be acceptable in lieu of BSE and CSE.

**Intended outcome:**

This would establish a rigorous mechanism for setting minimum standards for health professionals, starting with physicians, to enter practice. As they are standardized across educational institutions and countries, the exam results can also be used to evaluate and/or compare the performance of health professional schools in the country and internationally.

<b>One-time investments:</b>		<b>Recurrent expenditures from the state budget:</b>	
	US\$500,000 System set-up costs		Not applicable
<b>2023</b>	Pilot assessments in Tashkent in Tashkent Medical Academy and Tashkent Pediatric Medical Institute.	<b>2026</b>	Passing the CSE is a graduation requirement in all medical schools. MoH annually publishes passing scores and rates by medical schools.
<b>2024</b>	Exams are offered in all public and private medical schools.	<b>2027</b>	BSE passing score is a requirement for transition to Year 4 in all medical schools.  Pilot assessments of national qualifying exams for nurses, pharmacists, and

			dentists are carried out in Tashkent modeled around medical school exams.
2025	Exams are required for all medical students in public and private medical schools. Exam results are used for information and not as a criterion for graduation or transition to a higher year.	2029	Exams are offered in all nursing, pharmacy, and dental schools.
2026	CSE passing score is a requirement for medical school graduation.	2030	Exams are required with a passing score on a qualifying exam to become a requirement for graduation from nursing, pharmacy, and dental schools in two years.

**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

**No.6: Establish a re-certification process for physicians, nurses, pharmacists and dentists**

**Problem:**

Re-certification of health professionals is critical to ensuring that they have the up-to-date clinical knowledge and skills required to provide high-quality care. Uzbekistan has a continuing professional development system, but no re-certification process for health professionals. After graduation, a professional receives a lifetime license. There is no process that requires the professional to demonstrate fitness to practice on an ongoing basis once they are in post.

**Best practices:**

Regular re-certification of health professionals (e.g., physicians, nurses, dentists) as part of continuing professional development is an established practice in many countries, including the US, Canada, the UK and Australia. Frequently, re-certification processes involve taking certified professional development activities (in-person or online) and, in addition, periodic certification exams. However, a gradual transition from proctored certification exams toward Longitudinal Knowledge Assessment is undertaking.<sup>13</sup>

**Solution:**

Introduce a five-year licensing system in a phased manner, with re-certification conditional on, initially, one, and ultimately two, criteria being met, namely: the accumulation of specified credit hours of continuing professional development; and a passing score on an examination (modeled on international examinations such as Longitudinal Knowledge Assessment).

Wherein:

- the license will be suspended if the criteria for re-certification are not met; and

<sup>13</sup> <https://knowledgeplus.nejm.org/board-review/abim-moc-requirements/>

- expenses associated with the accumulation of credit hours for primary health care workers in the public sector will be covered by extrabudgetary funds of the MoH.

**Intended outcome:**

Continuous improvement in care quality.

<b>One-time investments:</b>	US\$500,000 To support development of a framework Longitudinal Knowledge Assessments	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	Re-certification criteria and regulations developed for physicians modeled after international best practices.	<b>2027</b>	A longitudinal knowledge assessment re-certification exam, building on international re-certification exams, is introduced for nurses on a pilot basis.  A passing score on a longitudinal knowledge assessment re-certification exam is a requirement for the re-certification of physicians.
<b>2024</b>	Re-certification is launched for physicians. Proof of accumulated continuing professional development hours that meet the minimum required hours is the sole criterion. All recertification results are reflected in the national healthcare workforce registry.  Re-certification criteria and regulations developed for nurses modeled after international best practices.	<b>2028</b>	A longitudinal knowledge assessment re-certification exam, building on international re-certification exams, is introduced for pharmacists, dentists, and other health professionals on a pilot basis.  A passing score on a longitudinal knowledge assessment re-certification exam is a requirement for the re-certification of nurses.
<b>2025</b>	Re-certification is launched for nurses. Proof of accumulated continuing professional	<b>2029</b>	A passing score on a longitudinal knowledge assessment re-certification exam is a requirement for the re-

development hours that meet the minimum required hours is the sole criterion. All recertification results are reflected in the national healthcare workforce registry.

certification of pharmacists, dentists, and other health professionals.

A longitudinal knowledge assessment re-certification exam, building on international re-certification exams, is introduced for physicians on a pilot basis.

Re-certification criteria and regulations developed for pharmacists, dentists, and other health professionals modeled after international best practices.

2026

Re-certification is launched for pharmacists, dentists, and other health professionals. Proof of accumulated continuing professional development hours that meet the minimum required hours is the sole criterion. All re-certification results are reflected in the national healthcare workforce registry.

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Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)

### **No.7: Establish Departments of Clinical Epidemiology and Implementation Science**

#### **Problem:**

Clinical epidemiology is a subfield of epidemiology that is specifically focused on issues relevant to clinical medicine. This subfield has led to the development of evidence-based medicine and evidence-informed decision-making in healthcare. Implementation science is the study of methods and

strategies that facilitate the uptake of evidence-based practice and research into regular use by practitioners and policymakers.

Clinical Epidemiology and Implementation Science are two research areas that can significantly contribute to improving the quality and efficiency of healthcare delivery, patient safety and public health in Uzbekistan. Neither of these research areas requires investments in laboratories or other expensive resources. Despite this, both of these research areas are underdeveloped in the country. Addressing this shortcoming should be a high priority for the near future.

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**Best practices:**

Over the past several decades, many countries have invested heavily in building infrastructure for clinical epidemiology and implementation science. For example, major research funders in the UK, USA, Canada and Germany, such as the National Institute for Health Research, the National Institutes of Health, the Canadian Institutes of Health Research, and Innovationsfond, respectively, have made earmarked investments to build research infrastructure in these two areas. Professorships and training programs for implementation science and quality improvement have been created. Many scientific conferences focusing on healthcare improvement, implementation science, and clinical epidemiology have been funded.

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**Solution:**

Create Departments of Clinical Epidemiology and Implementation Science in five medical higher educational institutions.

Establish at least two joint training and degree programs with international universities in countries that have well-developed training programs in these two areas (e.g., the UK, Australia, Canada, the US).

Establish local expertise in clinical epidemiology and implementation science by funding junior faculty training in international programs and by establishing joint research studies in Uzbekistan.

Add clinical epidemiology and implementation science courses into postgraduate and research degree programs as a graduation requirement.

Allocate research funding to these two areas.

Amend existing regulatory acts for higher education faculty to allocate one full day a week for research.

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**Intended outcome:**

Investments in clinical epidemiology and implementation science lead to recurrent improvements in clinical care, the efficiency and effectiveness of public health interventions and systems, and Uzbekistan’s status as a center for impactful research.

<b>Required one-time investment:</b>	US\$ 2,000,000 to support joint degree programs	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	Departments of Clinical Epidemiology and Implementation Science are established in five medical higher educational institutions.	<b>2027</b>	<p>Ensure that at least 5 percent of the total annual budget of the <b>Fund for Financing Science and Support of Innovation</b> is used to fund research in the field of clinical epidemiology and implementation science.</p> <p>Require medical institutions to cover expenses related to the publication of research in selected peer-review journals.</p>
<b>2024</b>	Fund junior faculty training in international programs	<b>2028</b>	At least 5 original research articles in clinical epidemiology and implementation science are published in international peer-reviewed journals.
<b>2025</b>	<p>Establish joint training, degree, and research programs with international universities from countries that have well-developed training programs in these two areas in at least two medical schools.</p> <p>Establish research methodology hubs in departments of Clinical Epidemiology and Implementation Science to support faculty to design studies, analyze data, and publish in recognized international biomedical journals.</p> <p>Require all state-funded research grants have a</p>	<b>2029</b>	At least 10 original research articles in clinical epidemiology and implementation science articles are published in international peer-reviewed journals.

earmarked budget for methodological support

Existing regulatory acts are amended for faculty to allocate one full day a week for research.

**2026**

Clinical epidemiology and Implementation Science course work is required for all clinical graduate and research degree programs.

**2030**

At least 15 original research articles in clinical epidemiology and implementation science articles are published in international peer-reviewed journals.

**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

**No.8: Introduce a unified electronic register of health workers**

**Problem:**

No national registry of health workers exists to enable tracking of all health professionals throughout their careers, from initial vocational education to licensing, re-certification, continuous professional development and work experience. The existing "e-Kadr" system is still in the experimental stage. It is focused only on tracking physicians and currently operates only in the Syrdarya region. The system developed by the Chamber of Innovative Healthcare has not been adopted by the Ministry of Health and is a simple registry of doctors, not all health professionals. Further, it is not designed to provide data exchange with other information systems.

**Best practices:**

A robust, flexible registry of all national healthcare workers, public and private facilitates tracking the total healthcare workforce, including their educational qualifications, licensure, recertification, continuing medical education, employment, and disciplinary actions is a core part of health systems in many countries, including the USA, the UK, Canada, and Australia. National registries of this type reassure the public that quality and practice standards are being appropriately monitored.

**Solution:**

Develop a unified electronic register of health workers of public and private institutions to simplify monitoring the status of continuous training, as well as tracking career progress, starting with admission to vocational education. This might also be achievable through modifications to the existing e-Kadr system.

Introduce in phases over several years key data elements of the level of vocational education, the educational institution in which the diploma/degree was obtained, the year of graduation, work experience, licensing and re-certification, reports on continuous professional development, absence

from active work, awards and any disciplinary measures. Introduce to doctors first, then nurses, dentists, pharmacists and mid-level workers interfacing with patients.

Finance all expenditures related to the maintenance of the register from re-certification fees. Designate the Chamber of Innovative Health with the Department of Human Resources at the MoH as responsible entities for the maintenance of the registry in coordination.

Ensure appropriate level of access for the MoH, regional and district health authorities, and respective HR teams at health facilities.

**Intended outcome:**

A national register with comprehensive data on health workers is established.

<b>Required one-time investment:</b>	US\$ 500,000 Development and scaling costs	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	<p>Develop and approve minimum data requirements and standards for the "National Registry of Healthcare Workers" (with sources, mechanisms for collection) for physicians, dentists, and nurses, midwives, paramedics.</p> <p>Develop the registry and training materials.</p> <p>Ensure appropriate level of access for the MoH, regional and district health authorities, educational institutions and respective HR teams at health facilities.</p>	<b>2027</b>	Licensing and re-certification results for all pharmacists and dentists are reflected in the registry. All admitted nursing students are in the registry, with information on outcomes of graduate exams.
<b>2024</b>	All admitted medical students are in the registry, with information on the outcomes of pre-clinical (BSE) and clinical (CSE) exams.	<b>2028</b>	Licensing and recertification results for all nursing and other healthcare workers are reflected in the registry.

<p><b>2025</b></p>	<p>Licensing and recertification results for all doctors are reflected in the registry.</p> <p>Finance all expenditures related to the maintenance of the register from re-certification fees.</p>	<p><b>2029</b></p>
<p><b>2026</b></p>	<p>All admitted pharmacy and dental students are in the registry, with information on outcomes of graduate exams.</p>	<p><b>2030</b></p>

**Focus Area: [CREATING A HEALTH CARE WORKFORCE THAT MEETS INTERNATIONAL STANDARDS](#)**

**No.9: Create a national health care learning management platform**

**Problem:**

High mobility and turnover of staff in the public health care system require onboarding and reboarding systems to ensure that staff joining a health care organization or moving between organizations can take on the new responsibilities rapidly and with confidence. Such a system is missing in Uzbekistan.

There is, in addition, no agile system to routinely update employee competencies in a range of critical areas required by law. For example, in the absence of formalized easily accessible training on registration of vital statistics in the existing electronic system or detection and reporting of notifiable conditions, health professionals are left on their own to figure out such processes through trial and error, and the health system is deprived of the effective ability to track compliance.

Rapid advancement in clinical knowledge requires health workers to continuously update their expertise and skills. In the absence of a centralized platform to provide curated, high quality content, health workers must search for information directly, representing an avoidable waste of workers' energy and time, and raising concerns about the quality and fitness-for-context of the information thus obtained.

These gaps can be addressed effectively by the introduction of learning management systems/platforms that provide curated quality-assured content and help to monitor engagement/attainment at low cost and at scale. In Uzbekistan, while academic institutions deploy various learning management systems to address their institutional needs, no national learning management system or methodological guidance for health workers exists.

**Best practices:**

Onboarding and compliance systems are core human resources management components in many well-performing organizations, including the World Bank.

Learning management systems have been used for both onboarding and continuing professional development activities in North America and Western Europe for many years. BMJ learning and Medscape are some of the most prominent learning management systems used for continuing professional development in OECD countries and internationally.

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**Solution:**

Set up a national learning management platform managed and maintained by the Chamber of Innovative Medicine or other national-level agency not involved in the development of the online content for commercial use.

Ensure data exchange between the platform and the national healthcare workforce registry.

Develop methodological guidance and clear requirements for online training materials to be hosted on the national platform.

Establish a transparent review process to ensure all hosted material meets minimum standards.

Revise continuing professional development regulations to increase the share of online learning in the total number of required credit hours.

Allow health workers to receive credit hours for completing online materials hosted on the national platform.

Commission development of at least 10 mandatory online courses through an open competitive process, including training on quality of care, public private partnerships, management of priority conditions.

Require all incoming heads and deputy heads of health facilities, district and regional health authorities, and MoH staff, to complete mandatory online onboarding and relevant online training on regulatory, financial, material and human resources management foundations critical to taking on their new jobs.

Require all primary care physicians to complete mandatory training, to be developed and hosted on the national platform, on vital statistics registration, detection and reporting of notifiable diseases, and appropriate antibiotic use/prescribing.

Finance all expenditures related to the maintenance of the platform from re-certification fees.

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**Intended outcome:**

Enhanced efficiency and effectiveness of onboarding, compliance training and continuing professional development through centralized online curated content and monitoring system.

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<b>One-time investments:</b>	US\$ 750,000 Set up costs, including an initial set of mandatory courses	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	<p>Set up a national learning management platform managed and maintained by the Chamber of Innovative Medicine or other national-level agency</p> <p>Develop methodological guidance and clear requirements for online training materials to be hosted on the national platform</p> <p>Establish a transparent review process to ensure all material hosted meets minimum standards</p> <p>Develop online training, in quality of care and management of priority conditions</p>	<b>2027</b>	
<b>2024</b>	<p>Revise continuing professional development regulation to increase the share of online learning in the total number of required credit hours</p> <p>Allow healthcare workers to receive credit hours for completing online materials hosted on the national platform</p> <p>Commission development of at least 10 online mandatory training through an open competitive process</p>	<b>2028</b>	

Finance all expenditures related to the maintenance of the platform from re-certification fees.

**2025** Require all incoming heads and deputy heads of health facilities, district and regional health authorities, and MoH staff to complete mandatory online onboarding and relevant online training **2029**

**2026** Require all primary care physicians to complete mandatory training on vital statistics registration, detection and reporting of notifiable diseases, appropriate antibiotic use/prescribing **2030**

## FOCUS AREA 2: Transforming service delivery at the district level

Reforms in this focus area will address critical shortcomings in the efficiency and quality of care at the district level - which accounts for approximately 74 percent of inpatient and 97 percent of outpatient services provided in the public sector. The performance challenges at the district level to be targeted include the following:

- The quality of care provided at family doctor points, family medicine polyclinics, multi-specialty polyclinics and district hospitals does not meet international standards, partly due to a lack of clinical competencies among health workers in these settings.
- Access to medicines, essential laboratory tests and diagnostic procedures at the district level is inadequate, driving patients to seek care in high-tier care settings.
- Salaries at the district level are inadequate to recruit and retain an adequate complement of trained medical workers.
- Diagnostic services are fragmented across multiple settings, impeding the realization of economies of scale, and compromising quality control.
- Specialist services are fragmented across multispecialty polyclinics and district hospitals, impeding the achievement of integrated specialized care for patients.
- The extent and scope of task shifting are inadequate, adding to organizational inefficiency. Many more clinical tasks can safely be transferred from physicians to nurses, and from physicians in higher tier to physicians in lower tier facilities (particularly from district hospitals and specialist care settings to family medicine points and polyclinics) than currently occurs.
- District health systems do not have access to information systems that allow for the continuous collection and reporting of administrative and clinical data. There is, for example, no available information on the quality of care provided in health facilities.
- Both public health communications strategies and public health interventions are inadequate, in addition to being poorly integrated into clinical care provision.
- There are substantial gaps in the availability of essential medical equipment needed to provide appropriate care for the most common conditions addressed at the district level.

In response to these performance challenges, the National Health System Strategy includes specific reforms that will:

- Strengthen competencies of healthcare workers in family medicine clinics and district hospitals, ensuring the care provided for (a) 20 common conditions that are dealt with at the family medicine level and (b) 10 priority conditions at the district hospital level (accounting for up to 40 percent of outpatient visits and 80 percent of inpatient admissions) in meets international standards.
- Provide full financial and service coverage for medicines and diagnostics for 20 priority conditions at the family medicine level and 10 priority conditions at the district hospital level.

- Increase salaries at the district level to enable enhanced recruitment and retention of trained medical workers at this level.
- Centralize diagnostics capacity at the district hospital level, improving efficiency and quality control through integration.
- Merge multispecialty polyclinics into the district general hospital as an outpatient care unit.
- Implement task shifting from specialist to family medicine physicians, and from family medicine physicians to nurses.
- Strengthen health information systems in support of primary care transformation, allowing the continuous collection and reporting of administrative and clinical data, and of quality of care.
- Embed public health communication strategies and interventions into the provision of care provided in primary care facilities.
- The medical equipment needed to provide appropriate care for (a) 20 common conditions that are dealt with at the family medicine level and (b) 10 priority conditions at the district level will be procured by the state.

Below, these critical shortcomings and proposed reforms are described in greater depth, alongside an account of the international evidence of best practice that underpins the reforms, the estimated capital and recurrent expenditures needed to achieve them, and the key roadmap milestones.

## Focus Area 2: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

### **No.1: Strengthen competencies of healthcare workers in family medicine clinics and district hospitals through in-service training**

#### **Problem:**

*Family medicine.* Low competencies among family physicians undermine the quality of care that patients receive in family doctor points and polyclinics, and contribute to the routine bypassing by patients of primary care facilities, alongside the tendency of providers to over-refer to higher tier facilities. Clinical conditions that should be managed in family medicine polyclinics (e.g., hypertension, diabetes, coronary artery diseases and other common conditions) are too often referred to district hospitals or multi-specialty polyclinics (and even to secondary care settings at the regional level). Inadequate care in family medicine polyclinics also leads to higher utilization of emergency and ambulance services. As a result, the number of ambulance calls in Uzbekistan is extremely high by international standards – for example, it is twice the rate in England, a country with a much higher proportion of elderly.

In addition, most nurses in family medicine settings are limited (by both tradition and regulation) to playing a largely assistive role to physicians. Cultural norms restrict the opportunity for task shifting; and these are also reflected in workforce regulations that limit the possible roles of nurses in the

delivery of primary care. The role of the professional nurse as the concept is understood around the world is absent in Uzbekistan.

*District hospitals and multi-specialty polyclinics.* In addition, low competencies are available in district hospitals and multi-specialty polyclinics. Observations at both outpatient and hospital-based district facilities indicate that the care being offered is often substandard, non evidence-based and focused to an excessive degree on treatment by medication (and less so on, for example, accurate diagnosis or patient counseling). The result of this is that even patients with basic clinical conditions that should be managed at the district level are often referred to regional / private sector specialist facilities, which is both inconvenient and costly for patients, as well as an inefficient use of scarce health system resources. There is no reason for patients with acute respiratory infections to be hospitalized unless they require oxygen support or are at risk of respiratory failure; and, indeed, such patients are rarely hospitalized in OECD countries. In district hospitals observed as part *the Strategy's* development, such patients accounted for over a quarter of all hospitalizations. By way of comparison, in Canada, in 2021, respiratory infections, including COVID, accounted for just 3.5% of all hospitalizations.<sup>14</sup>

The main challenge for Uzbekistan is therefore not to produce more physicians and nurses, but rather to do a better job of training health professionals with the clinical skills necessary for efficient primary care delivery and to reassess the roles of physicians and nurses in providing primary healthcare.

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### **Best practices:**

Many family medicine referrals to specialist physicians, and district hospital referrals to regional and national level hospitals, that were observed during evaluations in 2022 would simply not occur in OECD countries, where well-trained physicians would be expected to manage the related conditions in the family medicine centers / district hospitals. In health systems with strong family medicine capacity, up to 90-95% of outpatient problems can be resolved at that level. In Uzbekistan, less than half of the outpatient contacts take place at the family medicine level.

Nurse practitioners in the UK, the US, and many EU countries conduct a comprehensive and complex assessment of the physical and/or mental health of patients with complex multiple medical needs and interpret the results of various assessments and studies to make a diagnosis in selected areas.

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### **Solution:**

Prioritize in-service training for the most prevalent 20 outpatient and 10 inpatient conditions or services facing family medicine clinics and district hospitals (accounting for approximately 40 and 80 percent of office visits and hospital admissions respectively according to international data).

Adapt current international guidelines and care pathways for the priority conditions and services in family medicine clinics. Ensure this is undertaken with hands-on support from international experts with

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<sup>14</sup> Canadian Institute for Health Information. [Hospital Stays in Canada](#) [product release]. Accessed November 17, 2022

experience in clinical training and family medicine, and active family medicine or nursing clinical practice license in one of the countries with rigorous licensing programs.

Adapt current international guidelines and care pathways for the priority conditions and services in district hospitals. Ensure this is undertaken with hands-on support from international experts with experience in clinical training and hospital care, and active clinical (physician or nursing) practice license in one of the countries with rigorous licensing programs.

Produce educational and case management materials for hybrid training to enhance the competencies of family medicine clinic and district hospital physicians and nurses, and to enable the reorganization of care. Ensure this is undertaken with hands-on support from international experts with experience in clinical training and active clinical (physician or nursing) practice license in one of the countries with rigorous licensing programs.

Pilot and scale hybrid in-service training for priority conditions in phases.<sup>15</sup>

Require in phased approach all clinical physicians and nurses to pass all in-service training for priority conditions to be able to hold their positions, with the exception of those who passed IFOM or other international clinical knowledge licensing exams.

**Intended outcome:**

The quality of the care or service for the most prevalent conditions and services accounting for at least 40 percent of outpatient visits and 80% of inpatient admissions (including day-surgeries) at the district level will meet international standards.

<b>One-time investments:</b>	US\$ 5,000,000 To support development and delivery of training International support	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	i) Care pathways and hybrid training programs for family medicine physicians and nurses are developed for six priority disease prevention and health promotion services and three chronic illnesses (hypertension, diabetes, and coronary artery disease), with support from	<b>2027</b>	v) Care pathways and hybrid training programs for at least two inpatient conditions per inpatient department, with support from international experts with experience in clinical training and active relevant medical or nursing practice license in one of the countries with rigorous licensing programs. All relevant district physicians and nurses in two pilot districts

<sup>15</sup> Hybrid in-service training refers to the combination of both face-to-face and online instruction and support.

	<p>international experts with experience in clinical training and active family medicine or nursing practice license in one of the countries with rigorous licensing programs.</p> <p>All family medicine physicians and nurses in two pilot districts in Syrdarya are required to pass all training to be able to hold their positions.</p>	<p>are required to pass all training to be able to hold their positions.</p> <p>vi) Care pathways and hybrid training programs for family medicine physicians and nurses are developed for five additional prevalent illnesses, with support from international experts with experience in clinical training and active family medicine or nursing practice license in one of the countries with rigorous licensing programs. All family medicine physicians and nurses in two pilot districts are required to pass all training to be able to hold their positions.</p> <p>Activities under (iv) are scaled to the remaining districts in Syrdarya.</p> <p>Activities under (iii) and (iv) are scaled to six regions.</p> <p>Activities under (ii) are scaled to the remaining regions.</p>
<p><b>2024</b></p>	<p>ii) Care pathways and hybrid training programs for family medicine physicians and nurses are developed for five minor illnesses, with support from international experts with experience in clinical training and active practice license (in family medicine or nursing) in one of the countries with rigorous licensing programs.</p> <p>All family medicine physicians and nurses in two pilot districts are required to pass all training to be able to hold their positions.</p> <p>Activities under (i) are scaled to the remaining districts in Syrdarya.</p>	<p><b>2028</b></p> <p>Activities under (v) and (vi) are scaled to the remaining districts in Syrdarya.</p> <p>Activities under (iii) and (iv) are scaled to the remaining regions.</p>
<p><b>2025</b></p>	<p>iii) Care pathways and hybrid training programs for family medicine physicians and nurses are developed for the remaining six priority major illnesses, with</p>	<p><b>2029</b></p> <p>Activities under (v) and (vi) are scaled to six regions.</p> <p>Activities under (iv) are scaled to the remaining regions.</p>

support from international experts with experience in clinical training and active family medicine or nursing practice license in one of the countries with rigorous licensing programs.

All family medicine physicians and nurses in two pilot districts are required to pass all training to be able to hold their positions.

iv) Care pathways and hybrid training programs for district hospital physicians and nurses are developed for at least two inpatient conditions per inpatient department (internal medicine, maternity, pediatrics and surgery), with support from international experts with experience in clinical training and hospital care, and active relevant medical or nursing practice license in one of the countries with rigorous licensing programs.

All relevant district physicians and nurses in two pilot districts are required to pass all training to be able to hold their positions.

Activities under (ii) are scaled to the remaining districts in Syrdarya.

Activities under (i) are scaled to six regions.

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**2026**

Activities under (iii) and (iv) are scaled to the remaining districts in Syrdarya.

Activities under (ii) are scaled to six regions.

Activities under (i) are scaled to the remaining regions.

**2030**

Activities under (v) and (vi) are scaled to the remaining regions.

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## Focus Area 2: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

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### **No.2: Provide full coverage for medicines and diagnostics for priority conditions**

#### **Problem:**

Limited access to essential medicines, laboratory tests and diagnostic procedures also contribute to the sub-standard care and unnecessary referrals observed at the district level.

While in family medicine polyclinics, access to starter dose medications (comprised of a list of 120 essential medications) is adequate, full medication coverage for chronic conditions or other essential services such as family planning have not been achieved. Providing free medications as a starter dose for chronic conditions is helpful, but many patients discontinue treatment when they are required to pay out-of-pocket. This creates an unnecessary cost burden for the health system, due to the high number of ambulance calls, hospitalizations and specialist consultations that are generated by the poor management of chronic diseases, alongside poor outcomes for patients.

The range of laboratory testing at the primary care level is limited – and the availability of even that limited range is inconsistent due to frequent disruptions in supply because of a shortage of funds. Though the most basic laboratory services (such as comprehensive blood count and urine analysis) are generally available, more advanced second-level tests often are not. For example, essential tests for the management and monitoring of diabetes, such as the hemoglobin A1C test, and other common tests used in family medicine, such as blood tests for serum electrolytes or thyroid hormones, are not routinely available.

Importantly, procurement of medications and diagnostics is often not driven by needs assessment – i.e. according to the number of diagnosed patients requiring specific types of medicines or tests based on evidence-based recommendations. This results in stock-outs for some medications and tests, alongside large surpluses of other medications and diagnostics, at the district level, and even within individual health facilities.

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#### **Best practices:**

In most well-performing health systems, e.g., those in North American and in EU countries, medicines and diagnostics for prevalent conditions are freely and consistently available at the primary care/family medicine clinic level.

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#### **Solution:**

Given the limited fiscal space for health in Uzbekistan, it is not realistic to provide full financial / service coverage for all medicines and diagnostics relating to all conditions that are presented present at the primary care level. Therefore, 20 priority outpatient and 10 priority inpatient conditions and

services, accounting for approximately 40 percent of primary care outpatient encounters (according to international data) and 80 percent of hospitalizations at the district hospitals (according to local data) will be prioritized for full coverage. This target will be achieved by (a) a re-allocation of existing funds from medicines and diagnostics in general to those 20 prioritized conditions, alongside (b) some additional funding. This reform will be piloted in two districts. Once equipped with better estimates of the prevalence of conditions and the funds required to provide full coverage for them, this reform will be scaled to the rest of the country.

**Intended outcome:**

By re-prioritizing government health expenditures, *the Strategy* will ensure uninterrupted availability of essential medicines and diagnostic tests at the primary care level – focusing on those that are, according to international guidelines, required for the management of prioritized 20 outpatient and 10 conditions and services, thus minimizing the need for costly interventions at higher tiers of care.

This action will also contribute to the objective of district hospitals managing 85 percent and family medicine clinics managing 80 percent of hospital admissions recorded in the public sector.

<b>One-time investments:</b>	Not applicable	<b>Recurrent expenditures from the state budget:</b>	Per 100,000 population costs are available after implementation in two districts in Syrdarya
<b>2023</b>	Full coverage for the medicines and diagnostics relating for the health states and conditions below piloted in two districts in Syrdarya.	<b>2027</b>	Activities under (iv) are scaled to the remaining districts in Syrdarya  Activities under (iii) are scaled to six regions.  Activities under (ii) are scaled to the remaining regions.
	i)Health States: prenatal care, family planning, pregnancy tests Major illnesses: hypertension, diabetes, coronary artery diseases	<b>2028</b>	Activities under (iv) are scaled to six regions.  Activities under (iii) are scaled to the remaining regions.
<b>2024</b>	ii)Minor illnesses: upper respiratory tract infection, skin conditions (eczema, shingles, urticaria), anemia, parasitosis, gastrointestinal conditions (dyspepsia, gastroenteritis), tonsillitis		

Activities under (ii) are piloted in two districts in Syrdarya.

Activities under (i) are scaled to the remaining districts in Syrdarya.

**2025**

iii) Major illnesses: asthma/COPD, pneumonia, osteoarthritis, rheumatoid arthritis, hepatitis B and C

Activities under (iii) are piloted in two districts in Syrdarya.

Activities under (ii) are scaled to the remaining districts in Syrdarya.

Activities under (i) are scaled to six regions.

**2029**

Activities under (iv) are scaled to the remaining regions.

**2026**

iv) Ten priority inpatient illnesses and services (at least two per internal medicine, maternity, pediatric and surgery) for full coverage of medicines and diagnostics added based on local data and available fiscal space

Activities under (iv) are piloted in two districts in Syrdarya.

Activities under (iii) are scaled to the remaining districts in Syrdarya.

Activities under (ii) are scaled to six regions.

Activities under (i) are scaled to the remaining regions.

**2030**

**No.3: Establish competitive salaries for primary care physicians, nurses and other mid-level health professionals**

**Problem:**

In many district health systems, approximately half of the physician positions are either unoccupied or shared, an indication of long-standing recruitment challenges. In addition, the retention of existing staff is becoming more challenging - there is, for instance, a growing tendency for the most qualified physicians employed in public facilities to transition to private facilities, on a full-time or part-time basis.

The lack of physicians at the district level is driven by very low salaries, which can also in some cases force physicians to have more than one full-time job, impacting on their work-life balance. Currently:

- the starting salary of a physician in a family medicine point or polyclinic is approximately US\$ 240 per month (i.e. this is the funding available for one full-time position); and
- the salary for a physician with 15 years of uninterrupted work in the public sector (and higher qualification grades assigned by the MoH) can be increased above this level, but by no more than 40%.

By way of comparison, qualitative research indicates that, in the private sector, salaries for competent non-surgical specialty physicians are more than US\$ 2,000 per month in Tashkent and major cities, and US\$ 700-1,000 per month in the rest of the country, while starting salaries of US\$500-600 are typical in both settings.

As reported by the State Statistics Committee, the health workforce (alongside the education workforce) is at the bottom of the scale, with some of the lowest salaries in the entire economy.

**Best practices:**

Doctor salaries are at the top of salary rankings in most OECD countries, including in the countries of North America and the European Union. Across OECD countries, the remuneration of doctors is substantially higher than the average wage of all workers. In most countries, family medicine specialists earn two to four times more than the average wage in each country.<sup>16</sup> This helps health care employers in these countries to recruit and retain the most talented people, and motivate continuous learning.

Countries with a similar economic history to Uzbekistan have also moved in this direction. After the break-up of the Soviet Union, Estonia had low health worker salaries, and the health system faced similar recruitment and retention challenges to those observed in Uzbekistan today. As a long-term remedy to the outflow of talent from the healthcare sector, Estonia deployed a national average salary

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<sup>16</sup> OECD (2021), Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/ae3016b9-en>.

as a benchmark for physician salaries, which could not fall below twice the national average salary, while nurse salaries could not fall below the national average salary.

**Solution:**

Establish starting doctor and nurse salaries at no less than twice the national salary average and the national average salary, respectively, as reported by the State Statistics Committee, to be made contingent on individual health professionals meeting minimum competency requirements.

Pilot the arrangement in two districts in Syrdarya and scale to the entire country in stages.

Minimum competency requirements will be determined by passing either one of the following:

- online/hybrid continuing professional training on the 20 outpatient or 10 inpatient priority services and conditions, with curricula developed and peer-reviewed with support from licensed general practitioners / family medicine specialists, hospitalists, practicing nurses and other relevant specialists from a country with rigorous medical and continuing professional training (e.g., the US, the UK, Canada, Australia, Germany, Austria);
- an international medical clinical science qualifying exam provided by a country with rigorous medical and continuing professional training such the US, the UK, Canada, Australia, Germany, United Arab Emirates (e.g., an International Foundation of Medicine (IFOM) clinical science exam).

**Intended outcome:**

District health systems’ ability to attract and retain a competent workforce (physicians and nurses), as measured by passing rigorous in-service training for priority conditions or international clinical knowledge exams, will be improved substantially. The ratio of the number of employed physicians to the number of full-time positions in the primary care will, at the point of full implementation of the reform in 2028, be no more than 9 to 10. As a result, physician workload as measured by the number of patients per physician will decrease providing more time for patient care and continuous learning.

<b>One-time investments:</b>	Not applicable	<b>Recurrent expenditures from the state budget:</b>	Approximately 40% increase in funding earmarked for salaries <b>per district</b> (after accounting for efficiency gains achieved from reorganization of care Implementation in two districts will provide accurate estimates
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<p><b>2023</b></p>	<p>i) Starting salary increases for family medicine clinic physicians and nurses (meeting minimum competency requirements) at no less than twice and equal of a national salary average respectively.</p> <p>Activities under (i) are piloted in two districts in Syrdarya.</p>	<p><b>2027</b></p>	<p>Activities under (ii) are scaled to six regions.</p> <p>Activities under (i) are scaled to the remaining seven regions and territories.</p>
<p><b>2024</b></p>	<p>ii) Starting salary increases for district hospital physicians and nurses (meeting minimum competency requirements) at no less than twice and equal of a national salary average respectively.</p> <p>Activities under (ii) are piloted in two districts in Syrdarya.</p> <p>Activities under (i) are scaled to the remaining districts in Syrdarya.</p>	<p><b>2028</b></p>	<p>Activities under (i) are scaled to the remaining seven regions and territories.</p>
<p><b>2025</b></p>	<p>iii) Starting salary increases for other district health system physicians and nurses (meeting minimum competency requirements) at no less than twice and equal of a national salary average respectively.</p> <p>Activities under (iii) are piloted in two districts in Syrdarya.</p> <p>Activities under (ii) are scaled to the remaining districts in Syrdarya.</p> <p>Activities under (i) are scaled to six regions.</p>	<p><b>2029</b></p>	

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2026	Activities under (iii) are scaled to the remaining districts in Syrdarya.	2030
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Activities under (ii) are scaled to six regions.

Activities under (i) are scaled to the remaining seven regions and territories.

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**Focus Area: [TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL](#)**

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**No.4: Centralize diagnostic services at the district hospital level**

**Problem:**

Diagnostic services are fragmented across multiple care settings. This means that the health system is failing to realize potential economies of scale, and the efficient quality control, that can be enabled by service integration. The results include unnecessarily high costs and low quality.

For example, in most districts in Uzbekistan, the district hospital, the multispecialty polyclinic, and the family medicine polyclinics all have their own laboratories. At a minimum, each family medicine polyclinic has 0.5 laboratory physician positions, and 1.0 laboratory nurse positions, despite the modest number of tests performed in these settings (approximately 20-30 tests per day on average). While laboratory physicians should be well-represented in any effective health system, current staffing levels are unnecessary. For example, there is no reason to have a physician supervising a basic laboratory that performs a few dozen routine tests per day.

Delivery of other diagnostic services are also fragmented and inefficient across the health system. For example, in some districts, both multispecialty polyclinics and district hospitals have standalone endoscopy, ultrasound and X-ray capacities, even in cases where these providers are located in the same buildings and / or are within walking distance. In fact, it is not unusual for clinicians to disregard lab or other diagnostic results from other settings (due to concerns about quality), and order duplicative tests in their own facility – representing an avoidable waste of resources.

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**Best practices:**

In most health systems in the countries of North America and the European Union, primary care outpatient facilities rarely have their own laboratory and diagnostic units. These services are centralized, while primary outpatient care facilities are responsible for point-of-care testing, specimen collection, and reporting back the test results to patients.

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**Solution:**

Consolidate laboratory services in a large district clinic (e.g., a district hospital) through the development of an efficient logistics system to transport specimens and electronically report test results similar to those already used in the private sector. Ensure family medicine clinics collect specimens and provide point-of-care testing where no complex equipment and lab specialist staff are needed.

Consolidate other diagnostic services at the central district hospital level with electronic test results, with needs-based scheduled services provided at family clinics using central diagnostic unit resources.

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**Intended outcome:**

Centralization of diagnostic services at the district hospital level will generate substantial savings, creating budget space for expanded coverage for diagnostics and increased staff salaries.<sup>17</sup> Centralized services will also minimize variation in the quality of services within each district.

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<b>One-time investments:</b>	US\$ 200,000 per district Implementation in two districts will provide accurate estimates	<b>Recurrent expenditures from the state budget :</b>	Not applicable
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**2022****2027**

**2023** i) Laboratory services are centralized at the district hospital level. **2028**

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<sup>17</sup> Establishing capacity within the public sector system is, over a long term, a much cheaper and lower risk option due to lower transaction costs (relating to procurement, contracting and monitoring) and greater potential to leverage economies of scale.

	Activities under (i) are piloted in two districts in Syrdarya.	
<b>2024</b>	ii) Other diagnostic services are centralized at the district hospital level.  Activities under (ii) are piloted in two districts in Syrdarya.  Activities under (i) are scaled to the remaining districts in Syrdarya.	<b>2029</b>
<b>2025</b>	Activities under (ii) are scaled to the remaining districts in Syrdarya.  Activities under (i) are scaled to six regions.	<b>2030</b>
<b>2026</b>	Activities under (ii) are scaled to six regions.  Activities under (i) are scaled to the remaining regions.	

Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

**No.5: Merge district multispecialty polyclinics into district general hospitals as an outpatient care unit**

**Problem:**

At the district level, specialized services are fragmented across multiple free-standing multispecialty polyclinics and district hospitals. This contributes to considerable organizational inefficiency, alongside poor integration of outpatient and inpatient specialty services, and poor patient experience.

For example, in a typical primary care setting, a patient with a pulmonology disease that requires hospital care is likely to initially see a pulmonologist in a multidisciplinary polyclinic, and then be referred to a district hospital (or self-refer to a district hospital), where care for pulmonology patients

is limited due to the lack of pulmonology staff positions. While there is a pulmonologist at the district hospital, he/she legally cannot provide care at the district hospital as these are two separate organizational entities. Thus consultation with subspecialists stationed either in district hospitals or polyclinics is inefficient as physicians assigned to one facility are not permitted to provide care in the other.

**Best practices:**

Polyclinics or primary care centers in other countries work effectively without employing specialized specialists, who are instead based in district or regional (regional) hospitals. Standard practice in most multidisciplinary hospitals in the EU and North America for narrow specialists in hospitals receive both outpatients and provide care for hospitalized patients, thus ensuring patients receive seamlessly integrated specialized care.

**Solution:**

Transform district multi-specialty polyclinics into consultative/outpatient departments of central district hospitals.

Revise, with international expert support, care pathways for patients requiring specialized care to ensure seamless specialized outpatient and inpatient care.

Review and gradually expand the scope of services provided at the district hospital level.

Revise arrangements and reimbursement mechanisms at the district hospital level to motivate outpatient department physicians to provide care in hospital wards and ward physicians are motivated to provide outpatient services are introduced.

Require a family medicine physician referral for patients to obtain free specialist consultations at the district hospital level.

**Intended outcome:**

More efficient and integrated specialized care at the district level – contributing to the objective of district hospitals managing 85% of hospital admissions recorded in the public sector.

<b>One-time investments:</b>	USD 2,500,000 to create a model and train staff during scaling	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	District multispecialty polyclinics are reorganized into	<b>2027</b>	Activities are scaled to the remaining regions.

outpatient departments of the district hospitals. Scope of services, care pathways, staffing norms, staff payment mechanisms and hospital operations are revised with support from international hospital experts. Family medicine physician referral is required for free specialist consultations.

Activities are piloted in two districts in Syrdarya.

**2024** Activities are piloted in two **2028**  
districts in Syrdarya.

**2025** Activities are scaled to the **2029**  
remaining districts in Syrdarya

**2026** Activities are scaled to six **2030**  
regions

Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

**No.6: Implement task shifting from specialist to family medicine physicians, and from family medicine physicians to nurses**

**Problem:**

Clinical conditions that should be managed in family medicine polyclinics (e.g., hypertension, diabetes, coronary artery diseases etc.) are often referred to district multispecialty polyclinics or even inpatient facilities, in part because of the limited or unclear scope of services to be available at the primary care level, which incentivizes both physicians and patients to favor referrals. For example, according to the most recently approved scope of services for family medicine clinics, even mildly elevated blood pressure (blood pressure of over 140/90) or high cholesterol levels are indications that the patient should be referred to a cardiologist at the district multi-specialty polyclinic.<sup>18</sup> Such unnecessarily limited scopes of service are not only inefficient, but also act as obstacles to appropriate capacity development at the family medicine clinic level.

At the same time, the ability of family doctors to provide an expanded scope of service is limited by their high workload, much of which relates to basic tasks, including many that can be performed by

<sup>18</sup> MOH Order #63 of February 18, 2022

non-physicians. The newly introduced panel size of one family physician per 2,000 population is reasonable by international standards. However, this represents a manageable workload only when a substantial share of chronic (~60%) and preventive care (~80%) is performed by non-physician staff.<sup>19</sup> However, in Uzbekistan, as nurses' role in primary care settings are limited by tradition and regulation to providing (non-clinical) assistance to doctors, delegation of basic clinical tasks to non-physicians is not currently possible.

Many relatively complex clinical conditions initially presented at the family medicine or district hospital levels can be addressed at those levels if provider-to-provider teleconsultation enabled. This would reduce the need for patients to undertake specialist visits or hospitalizations in a higher-tier facility. Teleconsultations based on available messaging/video conferencing applications could help with task shifting across multiple levels - from specialists to family medicine physicians, and from secondary or tertiary facilities to district hospital physicians.

Uzbekistan currently has 12,000 ambulance care physicians, many of whom work as ambulance attendants. In ambulance care, little difference in health outcomes has been shown even for serious care needs between the care provided by physician staffed crews over less expensive non-physician staffed crews.

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### **Best practices:**

Task shifting is needed across multiple service domains. Well-trained family physicians should be able to manage most of the clinical conditions currently referred to multispecialty polyclinic-based specialists. Polyclinics or community health centers in other countries run efficiently without full-time specialists - who are based instead at district or regional hospitals, and receive only necessary referrals. Many referrals that have been observed in Uzbekistan during recent evaluations – including from family medicine to specialist physicians, and from district hospitals to regional and national level hospitals - would not occur in OECD countries, where well-trained district-level (community) physicians would be expected to manage the conditions themselves.

The current organizational arrangements – in which there is limited task shifting from primary care physicians to nurses - is inconsistent with international practice, and, also, with the implications of misalignment with the strong evidence from international practice which demonstrates that task shifting can lead to reduced costs with no negative impact on health outcomes.<sup>20,21,22</sup> Nurse

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<sup>19</sup> Altschuler, Justin, et al. "Estimating a reasonable patient panel size for primary care physicians with team-based task delegation." *The Annals of Family Medicine* 10.5 (2012): 396-400.

<sup>20</sup> Kringos DS et al. (2019). Expert Panel on effective ways of investing in Health (EXPH) Task shifting and health system design. Brussels, European Commission

<sup>21</sup> Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. 2005. *Substitution of doctors by nurses in primary care*. The Cochrane database of systematic reviews. 2005(2):Cd001271

<sup>22</sup> European Commission. 2019. *Task shifting and health system design. Expert panel report*. Directorate-General for Health and Food Safety, Publications Office. Available at: <https://data.europa.eu/doi/10.2875/42878>

practitioners in the UK, the US, and many EU countries provide a significant proportion of preventive and chronic care at the primary care level, often conducting complex assessments of physical and/or mental health, interpreting the results of various assessments and studies, all of which are considered to be family medicine or specialist physician-level tasks in Uzbekistan.

A substantial part of ambulance physicians could be replaced with non-physician workers with appropriate specialized training. In the USA, for example, ambulance crews have no physicians on board. In the UK, physicians are involved under specified circumstances, triaging and phone advice provided by trained nurses minimizing the scope of services requiring physician involvement.

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**Solution:**

Revise the scope of services provided in the family medicine clinics in phases, and in alignment with in-service training of family medicine physicians and nurses in priority conditions and services.

Working jointly with international experts, create, national guidelines for task shifting from primary care physicians to nurses.

Review and revise, jointly with international experts, competency requirements and job descriptions for primary physicians and nurses.

Develop national evidence-based nursing clinical guidelines, protocols, and a documentation system to support independent nursing practice for priority conditions and services.

Ensure task shifting is reflected in updated or newly developed disease-specific care pathways and associated delivery reorganizations for priority conditions and services.

Implement family medicine physician-to-nurse and specialist-to-family medicine physician task shifting in a phased approach in parallel with in-service training under competency-building activities.

Develop best practice-based interim guidance on the use of messaging applications for provider-to-provider teleconsultations.

Establish or adjust a payment mechanism to account for provider-to-provider consultations between specialist and family medicine physicians.

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**Intended outcome:**

The scope of services provided by family medicine physicians will be expanded to help achieve the goal of family medicine office visits accounting for 80% of all outpatient encounters in the public sector.

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<b>One-time investments:</b>	US\$ 5,000,000	<b>Recurrent expenditures from the state budget :</b>	Not applicable
<b>2023</b>	<p>National guidelines for task shifting from primary care physicians to nurses created with support from international experts</p> <p>Jointly with international experts from strong primary care system:</p> <p>i) Scope of services at family medicine clinics is expanded to correspond with international practices for priority services conditions;</p> <p>ii) competency requirements and job descriptions for primary physicians and nurses reviewed and revised according to expanded scope of services and task shifting;</p> <p>iii) national evidence-based nursing clinical guidelines, protocols, and a documentation system to support independent nursing practice is developed for priority services and conditions;</p> <p>iv) task shifting is reflected in disease-specific care pathways and associated delivery reorganizations in priority services and conditions;</p> <p>v) family medicine physician-to-nurse and specialist-to-family medicine physician task shifting is implemented;</p>	<b>2027</b>	<p>Activities under (i) through (vii) are implemented in remaining regions for upper respiratory tract infection, skin conditions (eczema, shingles, urticaria), anemia, parasitosis, gastrointestinal conditions (dyspepsia, gastroenteritis), tonsillitis.</p> <p>Activities under (i) through (vii) are implemented in six regions for asthma/COPD, pneumonia, osteoarthritis, rheumatoid arthritis, hepatitis B and C.</p> <p>Activities under (i) through (vii) are implemented in two districts in Syrdarya for five additional prevalent conditions and services.</p>

vi) best practice-based interim guidance on the use of messaging applications for provider-to-provider teleconsultations is developed and implemented;

vii) adjusted provider payment mechanisms to account for provider-to-provider consultations between specialist and family medicine physicians are implemented.

Activities under (i) through (vii) are implemented in two districts in Syrdarya for prenatal care, family planning, child immunizations, well-baby care, hypertension, diabetes, coronary artery diseases.

**2024**

Activities under (i) through (vii) are implemented in remaining districts in Syrdarya for prenatal care, family planning, child immunizations, well-baby care, hypertension, diabetes, coronary artery diseases.

Activities under (i) through (vii) are implemented in two districts in Syrdarya for upper respiratory tract infection, skin conditions (eczema, shingles, urticaria), anemia, parasitosis, gastrointestinal conditions (dyspepsia, gastroenteritis), tonsillitis.

**2028**

Activities under (i) through (vii) are implemented in remaining regions for asthma/COPD, pneumonia, osteoarthritis, rheumatoid arthritis, hepatitis B and C.

Activities under (i) through (vii) are implemented in remaining districts in Syrdarya for five additional prevalent conditions and services.

**2025**

Activities under (i) through (vii) are implemented in six regions for prenatal care, family

**2029**

Activities under (i) through (vii) are implemented in six regions for five additional prevalent conditions and services.

planning, child immunizations, well-baby care, hypertension, diabetes, coronary artery diseases.

Activities under (i) through (vii) are implemented in remaining districts in Syrdarya for upper respiratory tract infection, skin conditions (eczema, shingles, urticaria), anemia, parasitosis, gastrointestinal conditions (dyspepsia, gastroenteritis), tonsillitis.

Activities under (i) through (vii) are implemented in two districts in Syrdarya for asthma/COPD, pneumonia, osteoarthritis, rheumatoid arthritis, hepatitis B and C.

**2026**

Activities under (i) through (vii) are implemented in remaining regions for prenatal care, family planning, child immunizations, well-baby care, hypertension, diabetes, coronary artery diseases.

Activities under (i) through (vii) are implemented in six regions for upper respiratory tract infection, skin conditions (eczema, shingles, urticaria), anemia, parasitosis, gastrointestinal conditions (dyspepsia, gastroenteritis), tonsillitis.

Activities under (i) through (vii) are implemented in remaining districts in Syrdarya for

**2030**

Activities under (i) through (vii) are implemented in remaining regions for five additional prevalent conditions and services.

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asthma/COPD, pneumonia,  
osteoarthritis, rheumatoid  
arthritis, hepatitis B and C.

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Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

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**No.7: Strengthen health information systems in support of primary care transformation**

**Problem:**

District health systems do not have access to information systems that allow for the continuous collection and reporting of administrative and clinical data for performance monitoring. All data collection and information exchange are entirely paper-based, and reliant on Microsoft Word or Excel for summative reporting. In addition, availability of computers and local area / Wi-Fi networks is limited to administrative offices.

Many of the actions required to transform the district-level health systems will need the support of specialized information systems. For example, the centralization of laboratory capacity will need to be supported by a robust laboratory information system, that records collected specimens and reports results electronically to family medicine clinics. Similarly, patient management systems in family medicine clinics and district hospitals are essential to obtaining granular data on the scope and scale of utilized services, including data on physician and nurse workloads, and the quality of care provided. Given the expanded coverage for medicines, pharmacy information systems are critical to reducing errors, achieving faster reporting and minimizing fraud. Unfortunately, none of these important specialized information systems are currently available in district-level health systems.

In addition, internet connectivity is still limited. Although 81 percent of public medical organizations' legal entities have internet access, the quality and reliability of the internet are variable, especially in rural areas.

The lifespan and life cycle of information communication technology (ICT) equipment are often limited to 3-5 years. Strategic planning and operational management of ICT inventory is necessary to ensure the resiliency, maintenance and timely replacement of ICT equipment to ensure uninterrupted provision of services, many of which are critical operations with close to zero acceptable downtime.

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**Best practices:**

The use of patient management software, laboratory information systems and other core specialized health information systems, are an established part of health care delivery in the health systems of the UK, US, the EU, and the majority of OECD countries.

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**Solution:**

Create a digital district-level health eco-system architecture with sufficient computing capacities, covering at least six core functions, to support primary care transformations and to be scaled to other districts and integrated in phases with the national health information architecture.

Review and optimize legacy data information flow and reporting processes for each core information system.

Develop and/or scale national patient, health practitioner and health facility registers from the pilot districts

Create a minimum set of terminology and exchange standards for core information systems needed at the primary care level.

Develop clear requirements and transparent processes for certification of third-party products in six core areas for use in primary care.

Design, pilot and implement patient and healthcare professional identification and authentication solutions.

Develop and/or deploy state-funded information systems (that meet certification requirements) covering at least six core functions listed below and to be distributed at no charge to health providers

- Patient management systems (for family clinics and district hospitals)
- Laboratory information system
- Pharmacy information system
- Appointment scheduling
- Referral system

Develop and deploy a district level data warehouse and analytics system.

Establish a regulatory framework that allows primary care providers to use any certified information systems in six core areas.

Implement electronic medical records system in family medicine clinics.

**Intended outcome:**

<b>One-time investments:</b>	Available after implementation in two districts	<b>Recurrent expenditures from the state budget :</b>	Maintenance costs
<b>2023</b>	i)Create a scalable district digital health eco-system architecture	<b>2027</b>	Activities under ix) and x) are implemented in remaining regions

covering at least six core functions

Activities under xii) are implemented in remaining districts in Syrdarya

ii)Review and optimize legacy data information flow and reporting processes for each core of the seven information system areas

iii)Create a minimum set of terminology and exchange standards for core information systems needed at the primary care level

iv)Develop clear requirements and transparent processes for certification of third-party products in six core areas for use in primary care

v)Establish a regulatory framework that allows primary care providers to use any certified information systems in six core areas

vi)Implement patients, health practitioner, and health facility registries and a clinical data repository

vii)Design, pilot and implement patient and healthcare professional identification and authentication solutions

**2024**

viii) Develop and/or deploy state-funded information systems (that meet certification requirements) covering at least six core functions listed below and to be distributed at no charge to health providers

**2028**

Activities under xii) are implemented in six regions

ix) Develop and deploy district level data warehouse and analytics system

x) Deploy information systems covering at least six core functions (either state funded or third party)

Activities under ix) and x) are implemented in two pilot districts in Syrdarya

**2025** Activities under ix) and x) are implemented in remaining districts in Syrdarya

**2029** Activities under xii) are implemented in six regions

**2026** Activities under ix) and x) are implemented in six regions

**2030** Activities under xii) are implemented in remaining regions

xi) Develop state-funded electronic medical records system for family medicine clinics that meet certification requirements and to be made available at no charge to health providers

xii) Deploy electronic medical records systems (either state funded or third party) in family clinics

Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

**No.8: Implement structured documentation and quality of care data reporting for priority conditions in family medicine clinics and district hospitals**

**Problem:**

There is no readily available information on quality of care provided family medicine clinics and district hospitals. Indeed, such health facilities do not have information on even basic statistics, such as the percentage of patients who have attained targets for control of blood sugar or blood pressure.

The absence of indicator data has numerous implications. It means there is no information on which to set local priorities for improved service delivery. Nor is it possible to set targets for improvement, or monitor progress over time. Oversight and governance of quality cannot be carried out, because the overseeing body cannot hold a health facility accountable for achieving some desirable result.

It should be noted that efforts are underway to develop a set of 12 quality indicators for primary care in the Syrdarya pilot project. However, some of these indicators are not quality indicators.

Health facilities at the district level use paper-based documentation which is unstructured, disorganized and time-consuming to complete. This makes it difficult to monitor whether patients have good control of their disease or are receiving all recommended drugs and tests. There is structured documentation for childhood growth monitoring, but the design is inefficient as it is lengthy – and yet still fails to capture all relevant information about development milestones.

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### **Best practices:**

Flowsheets and order sets have been implemented in multiple Canadian jurisdictions,<sup>23,24,25,26</sup> and , and all states<sup>27,28</sup> and federal departments in the US.<sup>29</sup> In Kazakhstan, as part of a previous World Bank-financed project, flowsheets combined with implementation of a registry and intensive coaching of primary care providers was associated with major improvements in quality.<sup>30</sup>

Decision-support tools (e.g., order sets) have been developed by individual researchers and academic institutions; by societies of specialty physicians or professional associations; by disease advocacy groups (e.g., the International Federation for Diabetes); non-profit organizations; and for-profit companies.

National indicator lists are core element of quality improvement system and available and regularly updated in many countries, including the USA, Canada, the UK and Netherlands.

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### **Solution:**

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<sup>23</sup> FamilyPhysicianDiabetesFlowSheet.pdf (gnb.ca)

<sup>24</sup> Hypertension Detection, Diagnosis and Management - Flowsheet (gov.bc.ca)

<sup>25</sup> 02c-HMP-Visit-Flowsheet-(pdf-fillable)-Quick-Reference.pdf (corhealthontario.ca)

<sup>26</sup> Type of Diabetes: Type 1 Type 2 Other (sma.sk.ca)

<sup>27</sup> Treatment Flow Sheet: Diabetes (state.fl.us)

<sup>28</sup> Iowa Diabetes Care Flowsheet.pdf

<sup>29</sup> Form BP-A689.060, Hypertension Flow Sheet (bop.gov)

<sup>30</sup> Chan BT et al. A programme to improve quality of care for patients with chronic diseases, Kazakhstan. WHO Bulletin 2020; 98(3): 161-9.

Create a national quality of care indicator list for primary care based on priority conditions and services.

Create and implement paper-based flowsheets for priority conditions and services.

Ensure all data from structured documentation (e.g., flowsheets) are transferred into an electronic database (linked to a patient management system) until electronic medical records are implemented

Generate and share electronically with health facilities and relevant health authorities at least four types of quality of care reports, including dashboards (indicators of current performance), run charts (trends over time), peer comparisons, and patient deficiency reports identifying specific gaps in quality for each individual patient which need to be addressed

Create and implement standard patient order sets for priority conditions and services to remind providers of which tests, drugs and treatments are indicated in that situation.

Require family medicine polyclinics and district hospitals to have a designated certified quality care focal point and/or teams.

Create a paid quality of care improvement facilitator position in each district to support health facility focal points teams.

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**Intended outcome:**

Quality of care data for priority conditions is available and shared with providers, managers and public at least on a quarterly basis.

The quality of **outpatient** care provided within family medicine clinics meets international standards for at least 20 priority conditions and services at no less than 70%.

The quality of **inpatient** care provided at the district hospitals meets international standards for at least 10 priority conditions and services at no less than 70%.

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<b>One-time investments:</b>	US\$ 500,000 set up costs; US\$ 30,000 per district scaling costs	<b>Recurrent expenditures from the state budget :</b>	Staff costs for paid quality of care improvement facilitator position per district
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<b>2023</b>	Establish a national quality of care indicator list for primary care (building on the internationally accepted and widely used indicators for	<b>2027</b>	Activities under (i), (ii) and for upper respiratory infection, anemia, parasitosis, dyspepsia, gastroenteritis, eczema, shingles, urticaria (iii), (iv) and
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<p>priority conditions and services).</p> <p>i) Family medicine polyclinics and district hospitals have a designated quality focal point and/or teams.</p> <p>ii) Create a paid quality of care improvement facilitator position in each district to support health facility focal points teams.</p> <p>iii) Create and implement paper-based flowsheets and order sets</p> <p>iv) Ensure all data from structured documentation (e.g., flowsheets) are transferred into an electronic database (linked to a patient management system) until electronic medical records are implemented</p> <p>v) Generate and share electronically with health facilities and relevant health authorities at least four types of quality of care reports on a quarterly basis</p> <p>Activities under (i), (ii) and for hypertension, diabetes and coronary artery diseases (iii), (iv) and (v) are piloted and implemented in two districts in Syrdarya.</p>	<p>(v) are implemented in remaining regions.</p> <p>Activities under (i), (ii) and for asthma, chronic obstructive pulmonary disease, pneumonia, osteoarthritis, rheumatoid arthritis and hepatitis B and C (iii), (iv) and (v) are implemented in six regions.</p> <p>Activities under (iii), (iv) and (v) for ten priority inpatient conditions and services are piloted and implemented in the two districts in Syrdarya.</p>
<p><b>2024</b> Activities under (i), (ii) and for hypertension, diabetes and coronary artery diseases (iii), (iv) and (v) are implemented in</p>	<p><b>2028</b> Activities under (i), (ii) and for asthma, chronic obstructive pulmonary disease, pneumonia, osteoarthritis, rheumatoid arthritis and hepatitis B and C (iii), (iv)</p>

	<p>the remaining districts in Syrdarya.</p> <p>Activities under (i), (ii) and for upper respiratory infection, anemia, parasitosis, dyspepsia, gastroenteritis, eczema, shingles, urticaria (iii), (iv) and (v) are piloted and implemented in two districts in Syrdarya.</p>		<p>and (v) are implemented in the remaining regions.</p> <p>Activities under (iii), (iv) and (v) for eight priority inpatient conditions and services are piloted and implemented in the remaining districts in Syrdarya.</p>
<b>2025</b>	<p>Activities under (i), (ii) and for hypertension, diabetes and coronary artery diseases (iii), (iv) and (v) are implemented in six regions.</p> <p>Activities under (i), (ii) and for upper respiratory infection, anemia, parasitosis, dyspepsia, gastroenteritis, eczema, shingles, urticaria (iii), (iv) and (v) are implemented in the remaining districts in Syrdarya.</p> <p>Activities under (i), (ii) and for asthma, chronic obstructive pulmonary disease, pneumonia, osteoarthritis, rheumatoid arthritis and hepatitis B and C (iii), (iv) and (v) are piloted and implemented in two districts in Syrdarya.</p>	<b>2029</b>	<p>Implement public reporting of quality of care for family medicine clinics</p> <p>Activities under (iii), (iv) and (v) for eight priority inpatient conditions and services are piloted and implemented in six regions.</p>
<b>2026</b>	<p>Activities under (i), (ii) and for hypertension, diabetes and coronary artery diseases (iii), (iv) and (v) are implemented in the remaining regions.</p> <p>Activities under (i), (ii) and for upper respiratory infection,</p>	<b>2030</b>	<p>Implement public reporting of quality of care for district hospitals.</p> <p>Activities under (iii), (iv) and (v) for eight priority inpatient conditions and services are piloted and implemented in the remaining regions.</p>

anemia, parasitosis, dyspepsia, gastroenteritis, eczema, shingles, urticaria (iii), (iv) and (v) are implemented in six regions.

Activities under (i), (ii) and for asthma, chronic obstructive pulmonary disease, pneumonia, osteoarthritis, rheumatoid arthritis and hepatitis B and C (iii), (iv) and (v) are piloted and implemented in the remaining districts in Syrdarya.

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#### Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

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#### **No.9: Embed public health communication strategies into provision of primary care**

##### **Problem:**

Non-communicable diseases represent an increasing share of the conditions that are diagnosed and treated at the district level. Hence, lifestyle choices and unhealthy behaviors constitute an important driver of public expenditures on therapeutic and curative care. For example, smoking, poor diet and low physical activity are important contributors to the growing number of diabetes, hypertension and coronary disease cases.

In this context, primary care facilities need to integrate the use of public health interventions and communication strategies - including in relation to the appropriate use of antibiotics and other medicines - into their routine functions. While a number of health promotion campaigns are run each year, it is unclear whether they: (i) are linked to the most pressing health needs; (ii) follow best practice guidelines; (iii) are part of or closely complement the routine delivery of clinical care in family medicine; and (iv) have any impact on population behaviors and thus on the utilization by the population of health services.

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##### **Best practices:**

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Communication strategies are widely used to support health care delivery in the countries of North America and the EU, and have been proven effective when properly designed.<sup>31,32</sup>

For example, communication campaigns - integrated into routine primary care functions - have successfully been used to improve physical activity, reduce antibiotic use, and healthy eating<sup>33,34,35</sup>

**Solution:**

Develop, with support from international experts, guidance on how to develop a communication strategy for social and behavior change communication at the primary care level, and to evaluate the impact of this.

Develop and implement a communication strategy on behavior change related to priority conditions, and a monitoring and evaluation framework for this, which should include indicators of utilization for services related to conditions avoidable in the presence of effective public health interventions and communications strategies.

**Intended outcome:**

Reduced inappropriate use of antibiotics and ambulance care, and reduced unnecessary hospitalizations. Improved population knowledge about family planning, healthy eating and physical activity.

<b>One-time investments:</b>	USD 300,000 set up costs; US\$ 5,000 scaling costs per district	<b>Recurrent expenditures from the state budget :</b>	Not applicable
<b>2023</b>	Develop, with support from international experts, guidance and implementation kit on how to develop a communication and evaluation strategy for	<b>2027</b>	Scale communication and evaluation strategies on health reform agenda, prenatal care, family planning, hypertension, diabetes, asthma, coronary artery diseases, and elimination of discrimination and

<sup>31</sup> Cooper A, Gray J, Willson A, Lines C, McCannon J, McHardy K. Exploring the role of communications in quality improvement: A case study of the 1000 Lives Campaign in NHS Wales. J Commun Healthc. 2015 Mar

<sup>32</sup> Shen F, Sheer VC, Li R. Impact of narratives on persuasion in health communication: A meta-analysis. Journal of Advertising. 2015 Apr

<sup>33</sup> Hallsworth M, Chadborn T, Sallis A, Sanders M, Berry D, Greaves F, Clements L, Davies SC. Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomised controlled trial. The Lancet. 2016 Apr

<sup>34</sup> Gardner B, Smith L, Lorencatto F, Hamer M, Biddle SJ. How to reduce sitting time? A review of behaviour change strategies used in sedentary behaviour reduction interventions among adults. Health psychology review. 2016 Jan

<sup>35</sup> Samdal GB, Eide GE, Barth T, Williams G, Meland E. Effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults; systematic review and meta-regression analyses. International Journal of Behavioral Nutrition and Physical Activity. 2017 Dec

	<p>social and behavior change communication</p> <p>Develop communication and evaluation strategies on health reform agenda, prenatal care, family planning, hypertension, diabetes, asthma, coronary artery diseases, and elimination of discrimination and stigmatization of selected conditions (e.g., HIV, tuberculosis)</p>		<p>stigmatization of selected conditions (e.g., HIV, tuberculosis) to the remaining regions.</p> <p>Scale communication and evaluation strategies targeting the inappropriate use of antibiotics, ambulance and hospital care to six regions.</p>
<p><b>2024</b></p>	<p>Implement communication and evaluation strategies on health reform agenda, prenatal care, family planning, hypertension, diabetes, asthma, coronary artery diseases, and elimination of discrimination and stigmatization of selected conditions (e.g., HIV, tuberculosis) in two districts in Syrdarya</p> <p>Develop communication and evaluation strategies targeting an inappropriate use of antibiotics, ambulance and hospital care.</p>	<p><b>2028</b></p>	<p>Scale communication and evaluation strategies targeting the inappropriate use of antibiotics, ambulance and hospital care to the remaining regions.</p>
<p><b>2025</b></p>	<p>Scale communication and evaluation strategies on health reform agenda, prenatal care, family planning, hypertension, diabetes, asthma, coronary artery diseases, and elimination of discrimination and stigmatization of selected conditions (e.g., HIV,</p>	<p><b>2029</b></p>	

tuberculosis) to the remaining districts in Syrdarya.

Implement communication and evaluation strategies targeting the inappropriate use of antibiotics, ambulance and hospital care in two districts in Syrdarya

**2026**

Scale communication and evaluation strategies on health reform agenda, prenatal care, family planning, hypertension, diabetes, asthma, coronary artery diseases, and elimination of discrimination and stigmatization of selected conditions (e.g., HIV, tuberculosis) to six regions.

Scale communication and evaluation strategies targeting the inappropriate use of antibiotics, ambulance and hospital care in the remaining districts in Syrdarya.

**2030**

**Focus Area: [TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL](#)**

**No.10. Give primary care facilities the equipment they need to address priority conditions**

**Problem:**

The results of the most recent stock-taking of the medical equipment in primary care reveal critical gaps in equipment essential to providing high quality care. The stock-taking exercise findings show, for instance, lack of modern automated analyzers in laboratories, shortage of patient monitors in intensive care and cardiology units, limited availability of baby scales in family medicine clinics and outdated operating tables.

**Best practices:**

In most countries in North America and the EU, health facilities are not be allowed to operate in the absence of essential medical equipment.

**Solution:**

Update, with support from international family medicine specialists and hospitalists, the current list of medical equipment needed for addressing 20 priority services and conditions in family medicine clinics and 10 priority conditions and services in district hospitals.

Ensure staged procurement of an updated list of medical equipment in primary care facilities.

Undertake training of primary care providers in the use of procured medical equipment.

Create an equipment monitoring and maintenance system in primary care.

**Intended outcome:**

Hospitalizations at the district level are increased, as a share of the total hospitalizations in the public system, to 85%; and outpatient visits in family clinics are increased, as a share of total outpatient visits in the public sector, to 80%.

<b>One-time investments:</b>	USD 500,000 per district	<b>Recurrent expenditures from the state budget :</b>	Maintenance costs at 5% of equipment costs per annum
<b>2023</b>	Update, with support from international family medicine specialists and hospitalists, the current essential list of medical equipment for the care of the 20 priority services and conditions in family medicine and 10 priority conditions and services in district hospitals.	<b>2027</b>	Procure medical equipment for district hospitals in the remaining regions in line with the updated list of essential equipment  Undertake training of district hospital staff in the use of procured medical equipment in the remaining regions
<b>2024</b>	Procure medical equipment for family medicine polyclinics, laboratories and diagnostic units in Syrdarya region in line with the updated list of essential equipment	<b>2028</b>	

Undertake training of primary care providers in the use of procured medical equipment in Syrdarya region

Create a primary care equipment monitoring and maintenance system

**2025**

Procure medical equipment for district hospitals in Syrdarya region in line with the updated list of essential equipment

Undertake training of district hospital staff in the use of procured medical equipment in the Syrdarya region

Procure medical equipment for family medicine polyclinics, laboratories and diagnostic units in six regions in line with the updated list of essential equipment

Undertake training of primary care providers in the use of procured medical equipment in six regions

**2029**

**2026**

Procure medical equipment for district hospitals in six regions in line with the updated list of essential equipment

Undertake training of district hospital staff in the use of procured medical equipment in six regions

Procure medical equipment for family medicine polyclinics, laboratories and diagnostic

**2030**

units in the remaining regions in line with the updated list of essential equipment

Undertake training of primary care providers in the use of procured medical equipment in the remaining regions

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Focus Area: **TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL**

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**No.11: Improve the quality of primary care infrastructure**

**Problem:**

Many district hospitals and family medicine clinics are housed in outdated buildings that are inefficient (e.g. high utilities and maintenance costs), and not conducive to modern care delivery pathways and concepts. For example, many buildings cannot accommodate advanced medical equipment, such as digital X-rays, computed tomography machines and automated laboratory analyzers.

The Government is improving primary care infrastructure through centralized and local capital investments but there are risks to efficiency and quality as architectural designs are not standardized. Recent regulations that require all new health facility construction projects to be coordinated with and agreed by the MoH are a step in the right direction, but standardisation by the MoH is urgently required.

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**Best practices:**

In North America and Europe, health facilities, especially hospitals, are designed by firms that specialize in healthcare and are up to date with the latest advances in healthcare delivery. Developing unified standard architectural designs/layouts for district hospitals will help ensure minimum standards and better alignment with current care pathways and technologies, while enabling economies of scale to be realized during the development of infrastructure, alongside operational efficiencies on an ongoing basis. Such national standardized architectural layouts for different types of health facilities, for example, are available in India to guide new infrastructure investments<sup>36</sup>.

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**Solution:**

Review national norms and standards for infrastructure facility for family medicine clinics and district hospitals.

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<sup>36</sup> [https://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidelines-2022/01-SDH\\_DH\\_IPHS\\_Guidelines-2022.pdf](https://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidelines-2022/01-SDH_DH_IPHS_Guidelines-2022.pdf)

In cooperation with international architects specialized in the design of health care facilities, define standardized architectural layout plans and blueprints for new family medicine clinics and district hospitals.

Require all future capital investments in family medicine clinic and district hospital infrastructure (rehabilitation, modernization, expansion, or new construction) to follow the new standard design requirements.

Develop a master plan for the upgrading the infrastructure of family medicine clinics and district hospitals.

Cancel investments in family medicine clinics and district hospitals until the new standards are developed and a master planning exercise is completed.

Implement the master plan in phases.

**Intended outcome:**

Physical infrastructure that reduces utilities and maintenance costs and enables efficient care.

<b>One-time investments:</b>	US\$ 1,000,000 for architectural layout plans and blueprints  Master plan will provide estimated construction cost estimates Approximately US\$ 10 million per new district hospital	<b>Recurrent expenditures from the state budget:</b>	Not applicable
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<b>2023</b>	Cancel investments in family medicine clinics and district hospitals until new standards are developed.  Review national norms and standards for infrastructure	<b>2027</b>	Phased implementation of the master plan in two regions.
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facility for family medicine clinics and district hospitals.

<b>2024</b>	Develop in cooperation with international architects specialized in the design of health care facilities standardized architectural layout plans and blueprints for new family medicine clinic and district hospital construction.  Require all future capital investments in family medicine clinic and district hospital infrastructure (rehabilitation, modernization, expansion, or new construction) to follow new standard design requirements.  Develop a master plan for the upgrading the infrastructure of family medicine clinics and district hospitals.	<b>2028</b>	Phased implementation of the master plan in three regions.
<b>2025</b>	Phased implementation of the master plan in one region.	<b>2029</b>	Phased implementation of the master plan in three regions.
<b>2026</b>	Phased implementation of the master plan in two regions.	<b>2030</b>	Phased implementation of the master plan in three regions.

**Focus Area: [TRANSFORMING SERVICE DELIVERY AT THE DISTRICT LEVEL](#)**

**No 12: Strengthen primary care to effectively diagnose and manage hepatitis B, hepatitis C and HIV**

**Problem:**

Testing of the population for viral hepatitis B (HBV) and viral hepatitis C (HCV) and treatment of identified patients is inadequate. In Uzbekistan, at least 3% of the population is infected with HCV (i.e. 1,004,000 people), and 3-5% of the population is infected with HBV (i.e. 1,750,000 people), which makes it a major public health problem.

The Government has launched an initiative to meet WHO targets for the elimination of HBV and HCV, and has set a goal for reducing new HCV cases by 90%, and a goal for mortality to be reduced by 65%

by 2030.<sup>37</sup> Currently, however, budget allocations to achieve the set goals are inadequate, despite estimates suggesting economic returns on achieving universal access to the diagnosis and treatment of hepatitis in the range of 1:6 - 1:8 within four years.

In Uzbekistan, testing is often limited and, as a result, 60 percent of those infected with HBV and 75 percent of HCV are not aware of their status.<sup>38,39</sup> Primary care plays a very limited role in the diagnosis and management of hepatitis B and C cases. Given the current sub-par rates of diagnosis and treatment, it is estimated that the set targets will not be reached until 2050 - 20 years later than the WHO targets committed to by the Government.<sup>40</sup>

In addition, the WHO "95-95-95" HIV target remains unmet, with only 78 percent of people living with HIV knowing their status, 59 percent receiving antiretroviral therapy, and 74 percent with undetectable viral load among those on ARVT. HIV testing remains unacceptably low among key populations, such as injection drug users (IDUs) – 31 percent; sex workers – 16 percent; and men who have sex with men – 4 percent.<sup>41</sup> Despite these high-risk groups determining the success of any national preventive goals, the coverage of these groups for preventive measures remains quite low.

The current interventions to ensure access to treatment, care and support for HIV patients are not sufficient to achieve WHO's 95-95-95 targets by 2030. This is in part because both diagnostics and treatment services are centralized at regional centers with limited engagement of the primary care capacity that is critical to the successful implementation of the WHO's "test and treat" approach, aimed at providing patient-centered care and follow-up measures for high-risk groups.

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### Best practices:

Many countries in North America and the European Union have developed effective screening strategies for HBV and HCV, and HIV, in which the primary care level plays the dominant role.<sup>42,43,44</sup>

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<sup>37</sup> Decree of the President of the Republic of Uzbekistan No PP-243 of 16.05.2022

<sup>38</sup> Rick Dunn; Erkin Musabaev, Homie Razavi, Shakhlo Sadirova et al // Progress Toward Hepatitis B and Hepatitis C Elimination Using a Catalytic Funding Model — Tashkent, Uzbekistan, December 6, 2019–March 15, 2020 *MMWR* / August 28, 2020 / 69(34);1161–1165 <https://www.cdc.gov/mmwr/volumes/69/wr/mm6934a3.htm>.

<sup>39</sup> Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated February 21, 2022 No. 83 "On additional measures to accelerate the implementation of national goals and objectives in the field of sustainable development for the period up to 2030". Tasks No. 3.c. (<https://lex.uz/docs/5870397>)

<sup>40</sup> Uzbekistan hepatitis elimination project (u hep) <https://cdfound.org/uhep-methodology/>

<sup>41</sup> UNAIDS (2020) <https://www.unaids.org/en/regionscountries/countries/uzbekistan>

<sup>42</sup> Jin J. Screening for Hepatitis B in Nonpregnant Adolescents and Adults. *JAMA*. 2020

<sup>43</sup> Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for Hepatitis C Screening Among Adults — United States, 2020. *MMWR Recomm Rep* 2020

<sup>44</sup> Walensky RP, Paltiel AD. New USPSTF Guidelines for HIV Screening and Preexposure Prophylaxis (PrEP): Straight A's. *JAMA Netw Open*. 2019

WHO recommends that persons infected with HBV who meet certain criteria receive lifelong treatment and that patients with HCV receive short-term courses of therapy for a complete cure. By implementing these recommendations, many countries, such as Egypt, Australia, Georgia, Mongolia, Western European countries, and the US, have achieved significant reductions in morbidity and death from HBV and HCV. For example, the Government of India offers free testing and treatment for both HBV and HVC. Pakistan has also proven that treating all patients diagnosed with HCV for three consecutive years will lead to lower healthcare cost<sup>45</sup>.

**Solution:**

Develop a primary care-driven screening/testing and management strategy for hepatitis B and C, and HIV that is informed by international best practices and cost-effective in the context of Uzbekistan.

Implement the new hepatitis B and C, and HIV screening strategy in a phased approach.

Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered.

Ensure that diagnosis and management of HIV takes places at the district hospital level, and that diagnostics and medications are fully covered.

**Intended outcome:**

WHO target achievement is expedited through embedding HIV diagnosis, prevention, and management into primary care

<b>One-time investments:</b>	Not applicable	<b>Recurrent expenditures from the state budget:</b>	Accurate estimates are available after implementation in two districts
<b>2023</b>	Develop a primary care driven screening/testing and management strategy for hepatitis B and C, and HIV that is informed by international best practices and cost-effective in the context of Uzbekistan	<b>2027</b>	Implement the new hepatitis B and C, and HIV screening strategy in six regions  Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered in six regions

<sup>42</sup> <https://www.who.int/ru/news/item/26-07-2019-who-urges-countries-to-invest-in-eliminating-hepatitis>

			Ensure that diagnosis and management of HIV takes places at the district hospital level, and diagnostics and medications are fully covered in six regions
<b>2024</b>	Implement the new hepatitis B and C, and HIV screening strategy in two districts in Syrdarya	<b>2028</b>	Implement the new hepatitis B and C, and HIV screening strategy in the remaining regions
	Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered in two districts in Syrdarya		Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered in the remaining regions
	Ensure that primary diagnosis and management of HIV takes places at the district hospital level, and diagnostics and medications are fully covered in two districts in Syrdarya		Ensure that diagnosis and management of HIV takes places at the district hospital level, and diagnostics and medications are fully covered in the remaining regions
<b>2025</b>	Implement the new hepatitis B and C, and HIV screening strategy in remaining districts in Syrdarya	<b>2029</b>	
	Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered in remaining districts in Syrdarya		
	Ensure that diagnosis and management of HIV takes places at the district hospital		

level, and diagnostics and medications are fully covered in remaining districts in Syrdarya

**2026**

Implement the new hepatitis B and C, and HIV screening strategy in two regions

Ensure that diagnosis and management of hepatitis B and hepatitis C takes place in the family medicine clinics and district hospitals, and diagnostics and medications are fully covered in two regions

Ensure that diagnosis and management of HIV takes places at the district hospital level, and diagnostics and medications are fully covered in two regions

**2030**

### FOCUS AREA 3: Transforming secondary and tertiary care

Reforms in this focus area will address critical shortcomings in the efficiency and quality of secondary and tertiary care in Uzbekistan. The performance challenges at these levels to be targeted through the reforms include the following:

- The provision of secondary care at the regional level, and tertiary care at the national level, is fragmented across multiple small, under-occupied, specialized hospitals and other centers, undermining both efficiency and quality of care.
- Regulation of the country's growing private health sector is seriously inadequate, thus exposing patients to potentially unsafe, ineffective, and inappropriate care, alongside financial exploitation.
- The country is in the early stages of deploying public private partnerships (PPPs) to mobilize private sector capital financing and other private sector resources. Uzbekistan can benefit from this source of additional financing and resources, but is not yet deploying PPPs in a strategic manner, i.e. focusing their deployment on delivery of the highest-priority capital investments, as identified in the proposed 'Master Plan' for reconfiguration of the health care estate / service delivery network in the country.
- Similarly, though the government has begun to enter into contracts with the private health sector for the delivery of specific services (e.g. urology, cardiology and traumatology services), no routinized contracting approach has been established – which is impeding the ability of government authorities to leverage their purchasing power effectively in its relations with the private sector, compromising value for money.
- Provider payment models at the regional hospital level are outdated – being input-based, they provide no incentive for providers to manage their resources efficiently (avoiding waste), or to be productive (maximizing high-quality outputs).
- Underfunding of the health care system creates gaps in service provision and coverage, and creates an obstacle to the full implementation of the Strategy.

In response to these performance challenges, the National Health System Strategy includes specific reforms that will:

- Concentrate secondary and tertiary care, integrating specialized hospitals, “dispensaries” and other centers into multi-specialty regional general hospitals.
- Strengthen regulation of the country's growing private health sector through an expanded licensing regime, and re-introduce inspection and monitoring of private facilities, underpinned by integration of the private sector (as a licensing condition) into the emerging digitalized national health information systems.
- Develop a Master Plan for a strategic transformation and re-configuration of the health care estate / service delivery network in Uzbekistan – and use this to optimize use of public private partnerships (PPPs), ensuring that the long-term costs of PPPs (which can be considerable) represent a worthwhile investment that enhances the allocative

efficiency and financial sustainability of the public health care system. Ensure that financial plans for all large PPP projects are subject to official audit, to ensure robust scrutiny and safeguard value for money.

- Introduce criteria-based, selective contracting with private health care providers for prioritized services (i.e., services for which there is an identified gap in public provision, and which cannot be addressed in a relevant timeframe via exclusive reliance on public providers). Routinize the process through annual tenders in which only the private providers who offer the best combination of low prices and high quality are selected.
- Improve efficiency of regional hospitals through the introduction of case-based payments based on diagnosis-related-groups (DRGs). Strengthen the capacity of health care purchasers, including the state health insurance fund, to monitor hospital responses to the new incentive regime introduced through the shift from an input-based to an output-based payment model.
- Adequate funding of the health care system – to be delivered by realizing the commitment to allocate at least 15.4% of general government expenditure to the health sector between 2023 and 2030 – will enable gaps in service provision and coverage to be addressed, and mobilize the resources necessary implement the Strategy in full.

Below, these critical shortcomings and proposed reforms are described in greater depth, alongside an account of the international evidence of best practice that underpins the reforms, the estimated capital and recurrent expenditures needed to achieve them, and the key roadmap milestones.

### **Focus Area 3: TRANSFORMING SECONDARY AND TERTIARY CARE**

#### **No.1: Concentrate secondary care provision in multi-specialty regional general hospitals**

##### **Problem:**

At the regional level, there is a large network of stand-alone specialized centers and hospitals that focus on specific diseases or procedures. For example, at the regional level, in addition to the multi-specialty general hospitals, there are 72 independent specialized hospitals and “dispensaries” in specialty areas such as tuberculosis, dermato-venereology, psycho-neurology, addiction, endocrinology, and cardiology, alongside general and perinatal diagnostic centers with a combined inpatient capacity of 10,000 beds.

Providing secondary care through networks of specialized centers is no longer considered best practice in an international context, and is particularly inappropriate in contexts of population ageing and epidemiological transition (i.e. from acute, infectious diseases, to chronic, non-communicable diseases such as cardiovascular diseases, diabetes, asthma, and cancer that require interdisciplinary care for both diagnosis and treatment).

Also, most of the specialized centers and hospitals at the regional level are small in terms of numbers of beds and staff, with significant unrealized potential for achieving economies of scale and coverage, as well as providing an additional range of services. This fragmentation of provision undermines efficiency – making it impossible for the health system to take advantage of economies of scale or scope.

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**Best practices:**

In many countries, ongoing reforms focus on concentrating specialized secondary care in multi-specialty general hospitals. Countries in the EU and North America, and most OECD countries, have already established multi-specialty general hospitals as the core of inpatient service provision. These incorporate and integrate specialty services within the overall umbrella of a general hospital, with centers of excellence in which higher levels of care (e.g., tertiary or quaternary services) are concentrated. It is worth noting that in the international rankings of the specialty care facilities, many are general multi-specialty hospitals.

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**Solution:**

With support from international practitioners of hospital medicine, review and revise the scope and volume of the inpatient and outpatient care to be provided at regional multi-specialty hospitals with the intention to integrate branches of specialty centers into regional multi-specialty general hospitals.

Review and update national norms and standards for both infrastructure and equipment at regional general hospitals necessary to provide the revised scope and volume of services.

In cooperation with international architects specialized in the design of hospitals, develop standardized architectural layout plans and blueprints for the regional multi-specialty hospitals.

Require any future capital investment projects in regional hospital infrastructure (rehabilitation, modernization, expansion, or new construction) to conform to the new standardized requirements.

Develop a Master Plan for the upgrading of regional multi-specialty (general) hospitals in terms of infrastructure and equipment to meet the new scope and volume of services, including the integration of separate specialized regional hospitals.

Cancel investments in regional specialist care and multi-specialty hospitals until the new standards are developed and the Master Plan has been completed.

Phased implementation of the Master Plan in all regions.

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**Intended outcome:**

Efficient and integrated referral care at the regional level that complements primary care.

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<b>One-time investments:</b>	<p>US\$ 700,000 for development of a master plan</p> <p>Cost estimates for implementation will be provided as part of a Master Plan</p>	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	<p>Cancel investments in regional specialist care and multi-specialty hospitals until the new standards are developed and a master planning exercise is completed.</p> <p>Review and revise, with support from international hospitalists, the scope and volumes of inpatient and outpatient care to be provided at regional multi-specialty hospitals with a view to the integration of branches of specialty centers into regional multi-specialty general hospitals.</p>	<b>2027</b>	<p>Phased implementation of the master plan in two regions, including investments in infrastructure and equipment to align with revised scope and volume of services.</p>
<b>2024</b>	<p>Review and update national norms and standards for both infrastructure and equipment at regional general hospitals to provide the revised scope and volume of services.</p> <p>In cooperation with international architects specialized in the design of health care facilities, define standardized architectural layout plans and blueprints for</p>	<b>2028</b>	<p>Phased implementation of the master plan in three regions, including investments in infrastructure and equipment to align with revised scope and volume of services.</p>

	regional multi-specialty hospitals.		
	Develop a Master Plan for the upgrading of regional multi-specialty (general) hospitals in terms of infrastructure and equipment to meet the new scope and volume of services, including the integration of separate specialized regional hospitals.		
<b>2025</b>	Phased implementation of the master plan in one region, including investments in infrastructure and equipment to align with revised scope and volume of services.	<b>2029</b>	Phased implementation of the master plan in three regions including investments in infrastructure and equipment to align with revised scope and volume of services.
<b>2026</b>	Phased implementation of the master plan in two regions, including investments in infrastructure and equipment to align with revised scope and volume of services.	<b>2030</b>	Phased implementation of the master plan in three regions including investments in infrastructure and equipment to align with revised scope and volume of services.

**Focus Area: TRANSFORMING SECONDARY AND TERTIARY CARE**

**No.2: Concentrate tertiary care provision in multi-specialty general hospitals**

**Problem:**

At the national level, there is a large network of specialized centers and hospitals focusing on specific diseases or procedures and providing covered care for only a fraction of the population. For example, there are 23 Republican Specialized Scientific and Practical Medical Centers and eight national clinical hospitals.

Providing secondary care through networks of specialized centers is no longer the prevailing approach, internationally, and inappropriate in contexts of population ageing and epidemiological transition (from acute, infectious diseases, to chronic, non-communicable diseases such as cardiovascular diseases, diabetes, asthma, and cancer that require interdisciplinary care for both diagnosis and treatment).

Also, most of the specialized hospitals at the national level are small in terms of beds and staff, with significant untapped potential to achieve economies of scale and coverage, and provide additional services. This fragmentation undermines efficiency – making it impossible for the health system to take advantage of economies of scale or scope. For example, in 2019, the V. Vakhidov Center for Surgery, a 370-bed hospital, admitted 8,804 patients for inpatient care with an average length of stay of 10.47 days and an occupancy rate of only 62 percent.

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### **Best practices:**

Hospital reforms are ongoing in most developed health systems. As part of such reforms, specialized tertiary hospitals have been transformed or consolidated into multi-specialty general hospitals, overcoming the fragmentation of subspecialty and hospital services. Countries in the European Union, North America, and most other OECD countries have adopted multi-specialty general hospitals as the core inpatient facility type that incorporate specialty services within the overall umbrella of a general hospital, with centers of excellence within which higher levels of care (e.g., tertiary or quaternary services) are concentrated. It is worth noting that in the rankings of the best specialized hospitals in the world, most are general multi-profile hospitals.

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### **Solution:**

As a first step, merge selected specialty centers in related fields, and turn the centers that already provide general care into multi-specialty hospitals.

Review, with support from international practitioners of hospital medicine, the scope and volumes of inpatient and outpatient care provided at national-level specialized centers and hospitals with a view to their transformation into regional multi-specialty general hospitals, with national centers of excellence providing referral tertiary and quaternary care.

Develop, with support from international practitioners of hospital medicine, the scope and volumes of inpatient and outpatient care to be provided at the national excellence centers within regional multi-specialty hospitals.

Develop a phased (master) plan for the transformation of national specialized centers into multi-specialty hospitals, with centers of excellence for tertiary and quaternary care.

Develop, with support from international experts, a phased epidemiologically-driven and needs-based Master Plan for establishing national centers of excellence in selected regional multispecialty hospitals (regionalization of national centers of excellence).

Review and revise national norms and standards for both infrastructure and equipment at the national centers of excellence to provide the revised scope and volume of tertiary and quaternary services.

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Cancel investments in national specialty and general hospitals that are not aligned with the phased transformation Master Plan.

Phased implementation of the Master Plan.

**Intended outcome:**

Improved efficiency in hospital spending. Improved access to tertiary and quaternary care in all regions.

<b>One-time investments:</b>	US\$ 700,000 for development of a master plan  Cost estimates for delivery will be provided as part of the Master Plan.	<b>Recurrent expenditures from the state budget:</b>	Not applicable
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<b>2023</b>	Review, with support from international hospitalists, the scope and volumes of inpatient and outpatient care provided at national-level specialized centers and hospitals with a view to the transformation into regional multi-specialty general hospitals, with national centers of excellence providing referral tertiary and quaternary care.	<b>2027</b>	Phased transformation of national centers into multi-specialty hospitals, with national centers of excellence, in line with the transformation plan.  Phased establishment of national centers of excellence in selected regional multi-specialty hospitals in line with the plan of regionalization of national centers of excellence.
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<b>2024</b>	Develop, with support from international hospitalists, the scope and volumes of inpatient and outpatient care to be provided at the national excellence centers within regional multi-specialty hospitals.	<b>2028</b>	Phased transformation of national centers into multi-specialty hospitals, with national centers of excellence, in line with the transformation plan.  Phased establishment of national centers of excellence in selected regional multi-specialty hospitals in line with the plan of regionalization of national centers of excellence.
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Merge cardiology and surgical angio-neurology centers into one center for cardiovascular diseases.

Merge Clinical Hospital for Eye Diseases and the Center for Eye Microsurgery into one Ophthalmology Center.

Develop a phased (master) plan for the transformation of national specialized centers into multi-specialty hospitals, with centers of excellence for tertiary and quaternary care.

**2025**

Develop, with support from international experts, a phased epidemiologically-driven and needs-based (master) plan for establishing national centers of excellence in selected regional multispecialty hospitals.

Merge Vakhidov Center for Surgery and the Center for Internal Medicine and Rehabilitation into a general hospital

Merge urology and nephrology centers into one center for diagnosis and treatment of kidney diseases

Review and revise national norms and standards for infrastructure and equipment at the national centers of excellence

**2026**

Phased transformation of national centers into multi-specialty hospitals, with

**2029**

Phased transformation of national centers into multi-specialty hospitals, with national centers of excellence, in line with the transformation plan.

Phased establishment of national centers of excellence in selected regional multi-specialty hospitals in line with the plan of regionalization of national centers of excellence.

**2030**

Phased transformation of national centers into multi-specialty hospitals,

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national centers of excellence, in line with the transformation plan.

Phased establishment of national centers of excellence in selected regional multi-specialty hospitals in line with the plan of regionalization of national centers of excellence.

with national centers of excellence, in line with the transformation plan.

Phased establishment of national centers of excellence in selected regional multi-specialty hospitals in line with the plan of regionalization of national centers of excellence.

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## Focus Area: **TRANSFORMING SECONDARY AND TERTIARY CARE**

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### **No.3: Establish an Agency for Licensing of Healthcare Facilities**

#### **Problem:**

Numerous challenges relate to the structure, conduct and performance of the private health care sector in Uzbekistan. These include a lack of accountability to patients and public authorities, leading to opportunistic behavior, undermining the safety, efficacy, appropriateness, and accessibility of care.

Currently, controls focus on intervention “after the fact” - in the form of punitive sanctions. This hinders the development of the market, creating business risks that are difficult to reduce; and yet it does not adequately protect patients from opportunistic behavior by private sector service providers.

At the present time, the main regulatory instrument in place is the licensing of facilities. This focuses on what private health facilities *have* at the time the license is issued, and not what they *do* as providers.

Key related challenges include the following:

- The licensing process is undertaken entirely by the Ministry of Health and the regions, but there are only 13 employees (4 in the Ministry of Health and 9 at the regional level), in the context of 7300 existing licensed private clinics and an unknown number of unlicensed clinics.
- The license fee is approximately \$50, a ‘flat fee’ that is unrelated to the complexity of the services to which the license relates, or the cost of the related verification/approval processes.
- There is currently a "moratorium" on the inspection of facilities, as a result of which state supervision of the conduct or activities of the private sector is extremely limited.

The Ministry of Health does not have data on what the private sector does, for whom, under what conditions or at what level of quality. This is due to the fact that the private sector does not provide data on activities to the Ministry of Health.

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**Best practices:**

Countries with an established private sector in health have a robust regulatory apparatus in place, including care quality regulators, that are responsible for inspection and monitoring of private health care delivery. In most cases, national policies and procedures require the integration of private facilities and providers into national health information systems, which is an important condition for the monitoring function, and, more generally, for strong, evidence-based policy-making in the health system.

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**Solution:**

Establish an Agency for Licensing of Healthcare Facilities as a regulator for health services. Its initial scope of work will focus on the licensing, monitoring and inspection of private facilities / providers in the Republic. However, its remit should extend to cover all public facilities / providers over the timeframe of the Strategy – to 2030).

Give the regulator the power / duty to undertake ongoing monitoring and periodic inspections of facilities / providers (with a focus on the safety and effectiveness of services provided).

Confer on the regulator the power to set license fees according to a published schedule that reflects the actual costs of the licensing process (including registration, and initial inspections), enabling the Agency to strengthen capacity in accordance with its level of activity.

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**Intended outcome:**

All medical facilities, starting with private, meet all the required quality standards for operation in the country.

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<b>One-time investments:</b>	US\$ 100,000 Set up costs	<b>Recurrent expenditures from the state budget :</b>	Not applicable
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<b>2023</b>	Establish an Agency for Licensing of Healthcare Facilities as a regulator for health services, with its initial scope of work focusing on the licensing, monitoring and inspection of <i>private facilities / providers</i> .	<b>2027</b>	Agency for Licensing of Medical Facilities' scope of work extends to the licensing, monitoring and inspection of national / regional level multi-specialty hospitals in the public sector.
	Permit the Agency to set license fees according to a published schedule that reflects the actual costs of the licensing		

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	process (including registration, and initial inspections).		
<b>2024</b>	Norms and conditions for monitoring and periodic inspection of facilities are revised providing the Agency with the power / duty to undertake ongoing monitoring and periodic inspections of facilities / providers (with a focus on the safety and effectiveness of services provided).	<b>2028</b>	
	Norms and conditions should be based on international practice and designed to improve safety without fostering corruption.		
<b>2025</b>		<b>2029</b>	Agency for Licensing of Medical Facilities' scope of work extends to the licensing, monitoring and inspection of district hospitals in the public sector.
<b>2026</b>		<b>2030</b>	Agency for Licensing of Medical Facilities' scope of work extends to the licensing, monitoring and inspection of family medicine clinics in the public sector.

**Focus area: TRANSFORMING SECONDARY AND TERTIARY CARE**

**No.4: Strategic deployment of public private partnerships (PPPs)**

**Problem:**

Public private partnerships (PPPs) enable the mobilization of private capital for public capital projects, and can increase the amount of investment that can take place in the health system.

However, PPPs also create long-term financial liabilities for the public sector and / or users – and the overall long-term cost may be higher compared to other methods of procurement. For example, the proposed multidisciplinary hospital in the Fergana region has an estimated capital value of \$125-150 million, a proportion of which will be financed by private investors and lenders. This is expected to

generate annual costs to the public sector of approximately \$15-24 million per year (significant share of the annual regional health budget).

Because PPPs generate long-term liabilities for the public sector, it is important that they are used in a strategic manner, focusing on the delivery of highest-priority capital investments, as identified in the Master Plan – which is not yet in place in Uzbekistan.

It is also important that decisions about PPP projects are taken by authorities with the specialist knowledge required to plan, procure, and contract for PPPs, and that all decisions are subject to independent scrutiny and challenge, to ensure long-term affordability and value for money. Currently, PPPs are a new area in the country, and the MoH lacks strong specialist knowledge to specify, procure and contract for them.

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### **Best practices:**

The WHO recommends that the use of PPPs should be:

- (a) embedded in a strategic plan for reconfiguration /optimization of the health care estate; and
- (b) directed towards the physical assets required to deliver that plan.

Regulations should require public authorities to undertake an objective assessment of the long-term costs of projects, underpinned by effective scrutiny (e.g. by an official auditor and, for larger schemes, the supreme audit institution of the country). In addition, the Ministry of Health must be funded to enable development of the internal capacities required to define a Master Plan for the health estate, and to implement this through PPPs and other procurement modalities.

This will require new specialist human resources to be scaled according to the number of large-scale capital investment projects to be implemented as part of the Master Plan.

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### **Solution:**

Based on master plans for primary care and regional and national hospitals, develop a unified strategic masterplan for the (re-) configuration of Uzbekistan's public health care infrastructure, with clear criteria for the selection of capital investment projects, based the following:

- 1) Analysis of the specific services that should be prioritized for public sector provision;
- 2) Assessment of the levels of the health care system (e.g., primary, secondary or tertiary care) in which they should be provided;
- 3) Identification of how the health-care estate needs to be reconfigured to achieve this; and
- 4) Prioritization of capital investments based on the desired reconfiguration of the health estate.

Do not proceed with any new PPPs that will incur an annual cost to government of over 5 million US dollars until a unified **strategic master plan** defining the above is prepared.

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Develop, with support from international experts, standardized economic evaluation templates/models for at least two main types of economic evaluation<sup>46</sup>, to be applied to all PPPs to inform decisions.

Require economic evaluation, with an added focus on long-term costs and the affordability of those costs and / or their potential impacts on the financial sustainability of the health budgets, for any PPP over USD 10,000,000 in annual cost. Make the findings of the evaluation public before taking an investment decision.

If PPPs become a major source of capital financing for a large-scale program of capital investments, establish and legislate for a “control total”, for the MoH and each region, expressed as the percentage of future annual budgets that can be earmarked for the future annual costs of PPP contracts.

Establish the routinized engagement of the Chamber of Accounts of Uzbekistan for schemes of over USD 50 million in capital value, with its reports and decisions being made public.

**Intended outcome:**

PPPs are deployed strategically to facilitate the reconfiguration and optimisation of the public health care estate, enhancing allocative efficiency in the public health care system, and do not jeopardize the long-term financial sustainability of national or regional health budgets.

<b>One-time investments:</b>	US\$ 500,000 (to cover development of the strategic plan, staff training and economic evaluation templates)	<b>Recurrent expenditures from the state budget:</b>	Not applicable
<b>2023</b>	Do not proceed with any new PPPs that will incur an annual cost to government of over 5 million US dollars until a unified <b>strategic master plan</b> defining the following is prepared.		<b>2027</b>
	Combine various master plans and revisions of care scopes and volumes into a unified strategic		

<sup>46</sup> Turner, Hugo C., Rachel A. Archer, Laura E. Downey, Wanrudee Isaranuwachai, Kalipso Chalkidou, Mark Jit, and Yot Teerawattananon. "An introduction to the main types of economic evaluations used for informing priority setting and resource allocation in healthcare: key features, uses, and limitations." *Frontiers in Public Health* (2021): 1236.

master plan, with a clear criteria for the selection of capital investment projects, and defining the following:

- 1) what services should be provided in the public sector,
- 2) in what tiers of the health care system (e.g., primary, secondary or tertiary care) they should be provided,
- 3) what reconfiguration of the health-care estate is needed to realise this; and
- 4) what capital investments are needed to deliver the desired reconfiguration of the health estate (**the investment decision**).

Undertake training for the MoH, with international expert support, in evaluating, specifying, procuring and contracting PPPs.

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<b>2024</b>	Develop, with support from international experts, standardized economic evaluation templates/models for at least two main types of economic evaluation <sup>47</sup> , to be applied to all PPPs to inform decisions. Require economic evaluation, with an added focus on long-	<b>2028</b>
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<sup>47</sup> Turner, Hugo C., Rachel A. Archer, Laura E. Downey, Wanrudee Isaranuwachai, Kalipso Chalkidou, Mark Jit, and Yot Teerawattananon. "An introduction to the main types of economic evaluations used for informing priority setting and resource allocation in healthcare: key features, uses, and limitations." *Frontiers in Public Health* (2021): 1236.

term costs and the affordability of those costs and / or their potential impacts on the financial sustainability of the health budgets, for any PPP over US\$ 10,000,000 in annual cost. Make evaluation findings public before decision.

Undertake training for the MoH, with international expert support, in evaluating, specifying, procuring and contracting PPPs.

**2025**      Require economic evaluation,      **2029**

with an added focus on long-term costs and the affordability of those costs and / or their potential impacts on the financial sustainability of the health budgets, for any PPP over US\$ 5,000,000 in annual cost. Make evaluation findings public before decision.

Establish and legislate a “control total” for each region and nationally, expressed as the percentage of future annual budgets that can be earmarked for the recurrent costs of PPP contracts.

Establish the engagement of the Chamber of Accounts of Uzbekistan for schemes of over US\$ 50 million in capital value, with its reports and decisions being made public.

**2026**      Require economic evaluation,      **2030**

with an added focus on long-term costs and the affordability

of those costs and / or their potential impacts on the financial sustainability of the health budgets, for any PPP over US\$ 1,000,000 in annual cost. Make evaluation findings public before decision.

### Focus area 3: **TRANSFORMING SECONDARY AND TERTIARY CARE**

#### **No.5: Closing critical service gaps through strategic engagement of the private sector**

##### **Problem:**

Recently, the government began contracting with private health care providers for tertiary health care, in specialties such as urology, cardiology and traumatology. There are concerns that these procurement mechanisms need to be more strategic to ensure value for money.

In addition, any adverse effects that these agreements with the private sector may have on the public sector have not been taken into account.

Procurement mechanisms are not currently used to ensure that only the best private sector entities are awarded a contract, or to create a robust incentive and accountability environment for contractors.

The current purchasing of private sector capacity in the "point market" (e.g., for vulnerable patients and to clear waiting lists) is an ineffective approach that does not make the best use of the purchasing power of the state to ensure low cost/high quality of services. The government needs to introduce a criteria-based, selective, approach to private sector contracting, and routinize the process, e.g. in the form of annual tenders in which only private providers who offer the best combination of low prices and higher quality services are selected for contracts.

In addition, it is unclear whether the emerging procurement mechanisms (managed by the State Health Insurance Fund) will be used strategically to enhance the development, growth and performance of the private sector. Best practices show that procurement can be an effective method of influencing quality of services and transparency of operations in the private sector, especially where private sector entities must fulfill specific quality and transparency criteria in order to become eligible for contracts.

It is important to note that the health financing reforms being undertaken (initially in Syrdarya) do not introduce health insurance but focus on provider payment mechanisms. The State Health Insurance Fund is in fact fully financed by general government revenues, and is therefore not an insurance fund. In order to avoid confusion in government, and among other stakeholders, including the general public, the word "insurance" should be dropped from the fund title, and renamed into State Health Fund (for example).

**Best practices:**

In most OECD countries, government purchasing arrangements – including those undertaken by state health insurance agencies - include a role for the private sector, alongside public sector entities. In such countries, legislation includes provisions to enable the MoH and the purchasing agency to regulate private providers who enter into contracts with the state, and to require them to disclose the information needed to ensure transparency and accountability for performance.

The best performing health systems undertake purchasing in a strategic manner – focusing expenditure on services and service domains that have been prioritized. This implies that contracting should be criteria-based, not comprehensive, and focused on addressing identified gaps in public provision, avoiding further duplication / fragmentation of care.

In addition, purchasing is used as a means of regulating the structure, conduct and performance of private care providers. The US Medicare program (an insurance scheme for people >65) provides a good example of how to use statutory powers and contractual conditions to achieve this. The legislation governing the Medicare scheme (the Social Security Act, US Congress 1935, as amended) includes a range of regulatory requirements that private providers must fulfill as a pre-condition for receiving a contract from Medicare. For example, to be eligible to receive a contract, hospitals must:

- (a) maintain an agreement with a Quality Improvement Organization (QIO);<sup>48</sup>
- (b) commit to reporting data on the quality, efficiency and costs of the care it provides;
- (c) agree not to bill patients for additional fees / charges above Medicare-defined prices;
- (d) submit to audit of their claims, medical records and cost reports; and
- (e) agree to disclose any financial interests they hold in other providers to whom they refer patients.<sup>49</sup>

Providers are not obliged to contract with Medicare but, if they do, strategic purchasing provides the state with a powerful instrument with which to influence the prices, volumes and levels of quality provided in the private sector.<sup>50</sup>

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<sup>48</sup> <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityImprovementOrgs>

<sup>49</sup> [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0006/339747/WHO-004-The-functions-and-governance-Georgia-SCREEN.pdf](https://www.euro.who.int/__data/assets/pdf_file/0006/339747/WHO-004-The-functions-and-governance-Georgia-SCREEN.pdf)

<sup>50</sup> The Social Security Act, US Congress 1935, as amended

**Solution:**

Develop a methodology (with support from international experts) for rapid assessment of the public sector's capacity to deliver secondary and tertiary services covered under the State Guaranteed Benefit Package, identifying critical gaps.

Perform a rapid assessment of the public sector's capacity following developed methodology.

Develop and make publicly available clear definitions of eligibility requirements for private sector providers that wish to enter into contracts with the public sector to address the identified gaps, taking note of international best practice (as outlined above).

Use the private sector, where appropriate, through a rolling program of 3-5 year service contracts with qualified private facilities / providers – those who offer the best combination of low price / high quality – and select them accordingly through an open competitive process to address identified gaps.

Place the terms of contracts in the public domain once the competitive selection is completed.

Rename the Mandatory Health Insurance Fund to reflect the fact that it does not have a designated funding stream (e.g. from insurance contributions), but is funded by general government revenues.

**Intended outcome:**

Purchasing of the private sector is used in a strategic way to address identified gaps in public sector capacity for prioritized services, and as a means of influencing the structure, conduct and performance of private providers that have, or wish to have, a contract with government entities. The result will be a private health sector that complements (rather than competes with) the public health sector, makes additional use of technical and financial resources, and thus strengthens the capacity of the health system as a whole to meet the health needs of the population.

<b>One-time investments:</b>	USD 300,000 to develop methodology and perform the first rapid assessment	<b>Recurrent expenditures from the state budget :</b>	Not applicable
<b>2023</b>	Develop a methodology (with support from international experts) for rapid assessment of the public sector's capacity to deliver secondary and tertiary services covered under the State Guaranteed Benefit Package.	<b>2027</b>	Sign 3-5 year service contracts with qualified private facilities / providers selected through an open competitive process to address identified capacity gaps in the public sector. Make the terms of contracts public (at least in terms of price, volume, quality and

	<p>Assess (in terms of quality, geographical accessibility and volume) the public sector's capacity to deliver all services covered under the State Guaranteed Benefit Package once in three years identifying critical gaps.</p> <p>Rename the Mandatory Health Insurance Fund to indicated tax-based funding.</p>	<p>timelines) with selected private providers.</p>
2024	<p>Develop and make publicly available clear selection criteria, monitoring criteria, definitions of minimum requirements, and volume of services by location for secondary and tertiary services provided by the private sector.</p> <p>Sign 3-5 year service contracts with qualified private facilities / providers selected through an open competitive process to address identified capacity gaps in the public sector. Make the terms of contracts public (at least in terms of price, volume, quality and timelines) with selected private providers.</p>	2028
2025	<p>Start undertaking monitoring and making publicly available findings as specified in the criteria and service contracts at least on an annual basis.</p>	2029
2026	<p>Assess (in terms of quality, geographical accessibility and volume) the public sector's</p>	2030

capacity to deliver all services covered under the State Guaranteed Benefit Package.

Develop and make publicly available clear selection criteria, monitoring criteria, definitions of minimum requirements, and volume of services by location for secondary and tertiary services provided by the private sector.

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### Focus area 3: **TRANSFORMING SECONDARY AND TERTIARY CARE**

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#### **No.6: Improving efficiency of regional hospitals through introduction of case-based payments based on diagnosis-related-groups (DRGs)**

##### **Problem:**

Hospitals at the regional level are funded on a historical line-item budgeting basis, linked to the number of available hospital beds. There is little flexibility to move funding from one line of expenditure to another. This type of budgeting impedes efficiency at the provider level. For example, the number of beds in a hospital defines (through bed-to-staff norms) staffing levels in hospitals. As routinely unoccupied hospital beds are often cut based on regular reviews (leading to cuts in funding and staffing) hospitals are incentivized to keep beds 'busy'. Of note, the hospital staffing norms only apply to the public sector, with private sector hospitals having full freedom to determine their staffing levels.

Originally, the number of hospital beds was defined by the population served by the hospital (via population-to-hospital beds norms), requiring regular revisions in the number of beds to keep up with changing demographics. However, this practice was done away with in favor of a simplified approach that increases the hospital budget annually to account for inflation and/or salary increases.

Over half of hospital beds in regional public hospital are designed to provide care for self-paying patients and are funded on a fee-for-service payment basis. This setup incentivizes hospitals to over-provide care for self-paying patients, and thus fosters inefficiency (e.g., through inappropriate care) and increased out-of-pocket payments for patients.

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##### **Best practices:**

Globally, countries use different provider payment mechanisms including DRGs, fees-for-service, and global budgets. DRGs are now a predominant payment method for both in-patient and out-patient

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care at the secondary level (including consultations and day-care procedures), creating incentives for efficiency and productivity by linking payment to outputs.

**Solution:**

Review and revise, with support from international experts, minimum standards for hospital staffing (inpatient care) to align with evidence and international best practices.

Require, in a phased approach, all hospitals, including private sector hospitals, to comply with revised inpatient care staffing norms.

Phased transition of regional health facilities from input-based historical for state funded and fee-for-service financing for self-paying patients to mixed financing (DRGs and global budgets) for in-patient admissions, day surgeries, and outpatient services. For surgeries and procedures that can be performed on a day-surgery basis, to incentivize transition to day-surgeries, set the rates for at no less than the rates for in-patient stays.

Undertake a phased transition of regional health facilities from a fee-for-service system is currently used for patient-funded services to a DRGs payment for in-patient admissions, day surgeries, and outpatient services using the same DRG rates for residents as used for government-funded services.

Ensure sufficient capacity to implement - through training; and to monitor the volume of services and results associated with new payment mechanisms - through access to relevant information systems.

Develop a methodology and ensure at least an annual review of DRGs for regional-level facilities to align prices with the most recent evidence on efficient staffing norms and input prices.

**Intended outcome:**

Improved efficiency and productivity in regional multi-specialty hospitals.

<b>One-time investments:</b>	USD 500,000 to review and revise hospital staffing norms, develop DRGs for secondary level hospital care, and training	<b>Recurrent expenditures from the state budget:</b>	Not applicable
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2023	<p>Review and revise, with support from international experts, minimum standards for hospital staffing (inpatient care) to align with evidence and international best practices.</p> <p>Develop DRGs for secondary level in-patient admissions, day surgeries, and outpatient services in regional multi-specialty hospitals.</p> <p>Introduce a phased transition to a mixed payment (DRGs and global budgets) for state-funded services in one region.</p> <p>Ensure sufficient capacity to implement through rolling training of staff</p> <p>Implement information systems that exchange data with hospital patient management information systems to monitor the volume of services and results associated with new payment mechanisms.</p> <p>Develop methodology and implement an annual review of DRGs prices for regional-level facilities to align prices with the most recent evidence on care, staffing norms, and input prices.</p>	2027	<p>Extend DRGs for self-paying patients in regional multi-specialty hospitals in the remaining regions.</p>
2024	<p>Introduce a phased transition to a mixed payment (DRGs and</p>	2028	

global budgets) for state-funded services in two regions.

Extend DRGs for self-paying patients in regional multi-specialty hospitals in one region.

Require all private sector hospitals providing state-funded hospital care to patients to comply with revised hospital inpatient care staffing norms.

**2025**

Introduce a phased transition to a mixed payment (DRGs and global budgets) for state-funded services in four regions.

Extend DRGs for self-paying patients in regional multi-specialty hospitals in two regions.

**2029**

**2026**

Introduce a phased transition to a mixed payment (DRGs and global budgets) for state-funded services in the remaining regions.

Extend DRGs for self-paying patients in regional multi-specialty hospitals in four regions.

**2030**

**FOCUS AREA 4:** Toward a more data-driven, transparent, strategic, and effective Ministry of Health

Reforms in this focus area will address critical shortcomings in the operations and performance of the Ministry of Health (MoH) – ensuring that the MoH (a) has access to data to underpin its policies and decisions, (b) becomes more open by sharing data and performance reports with the public, and (c) is a strategic and effective steward of the entire health care system in Uzbekistan. The performance challenges in these areas of reforms include:

- The public’s trust in the MoH is undermined due to the relative unavailability of information about the performance of the MoH, and the absence of public engagement in its policy-making processes and activities.
- There is no single unit or office that is responsible for developing system-wide quality of care indicators, setting data standards, collecting, analyzing, and reporting data. The result is the near-total absence of data on health care quality indicators.
- There is no systematic collection of feedback from healthcare workers or patients to the MoH.
- Reporting of notifiable diseases and vital statistics is not aligned with the latest developments.
- Sustainable financial and structural mechanisms to support the MoH in evidence-based and data-driven comprehensive policymaking are lacking.
- The MoH has no counterpart in the private sector with whom to engage in formal policy dialogue. This means that the MoH has limited understanding of the private sector, including limited data – impeding its ability to formulate effective regulations and purchasing procedures. The lack of openness in the current (informal) forms of dialogue also create risks of corruption.
- The quality and affordability of medicines in Uzbekistan is at risk due to conflicts of interest within the regulatory apparatus. There is a single agency in charge of both the development and regulation of the pharmaceutical industry.
- Medicines account for a significant proportion of out-of-pocket payments and are unaffordable for many low-income people, yet there is limited data on pricing and availability, and little government’s action to regulate and / or otherwise exert downward pressure on medicine prices.
- Pharmaceutical manufacturing, distribution and retail practices and regulations (as they are currently enforced) are misaligned with international best practices, resulting in uncertainty about and variation in the quality of medicines, and inappropriate prescription / utilization of medicines.
- Public health information and response is fragmented between communicable and non-communicable diseases (NCDs), and particularly under-developed in relation to the latter, despite the increasing importance of NCDs in the overall disease burden in the country.
- The laboratory network is segmented – with entirely different governance arrangements in the public and private sectors. It is fragmented within the public health sector, which leads to inefficiencies and places quality of testing at risk.

- There is no coordinated strategy to address the causes of Antimicrobial Resistance in Uzbekistan – i.e., the widespread availability of antibiotics, inappropriate use of antibiotics by the population, and excessive and inappropriate prescriptions for antibiotics by physicians.
- Data collection and response for communicable and non-communicable diseases is fragmented, and particularly being underdeveloped for the latter, despite the growing burden of noncommunicable diseases.

In response to these performance challenges, the National Health System Strategy includes specific reforms that will:

- Develop and launch an interactive Open Health portal that will serve as a warehouse of MoH and health-related documents and data, including quality of care data. This will draw on international expertise to define a list of minimum document categories and data to be made available on a routine basis on the portal.
- Establish a Department of Quality of Care Data and Analytics within the National Chamber of Innovative Healthcare to set data standards and to collect, analyze, and report to providers and the public the data on health care quality indicators.
- Establish a mechanism for the systematic collection and reporting of feedback from healthcare workers and patients.
- Implement a unified electronic surveillance system for notifiable conditions based on standard case definitions.
- Create sustainable financial and structural mechanisms to support the MoH in developing capacity for evidence-based and data-driven policy-making.
- Establish an Association of Private Medical Institutions to act as the counterpart to the MoH in formal, open, transparent policy dialogue.
- Eliminate conflicts of interest in the regulatory apparatus for the pharmaceutical industry by separating the agency in charge of development of the industry from the agency in charge of regulating it.
- Improve the availability of data medicines and medical services.
- Set up a National Committee for the Selection and Use of Essential Medicines within the MoH, free of conflicts of interest, to regularly update the national essential medicines list.
- Ensure that the regulations governing pharmaceutical manufacturing, distribution and retail practices are aligned with international best practices and are effectively enforced, ensuring consistent quality of medicines and addressing inappropriate prescription / utilization of medicines.
- Establish a National Center for Public Health to ensure a holistic approach to public health challenges and responses.
- Develop a master plan for reorganization, consolidation and integration of the public health laboratory network.

- Develop and adopt a National Antibiotic Resistance Control Plan 2030 with the National Center for Antimicrobial Resistance as the leading body to reduce the scale of the AMR problem in Uzbekistan and thereby minimize its impact on population health and the effectiveness and financial sustainability of the health care system.

Below, these critical shortcomings and proposed reforms are described in greater depth, alongside an account of the international evidence of best practice that underpins the reforms, the estimated capital and recurrent expenditures needed to achieve them, and the key roadmap milestones.

## Focus Area: TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH

### No.1: Build an “open data” Ministry of Health

#### Problem:

Sources of information on the MoH’s performance, activities, and policy-making processes are either not available or not readily accessible to the public. Engaging the general public and / or civil society organizations in policy making, and sharing information on processes and data on outcomes are important steps, helping to identify the public’s values, priorities and preferences, and ensure these are reflected in the decision-making process of the MoH, and building trust, accountability, and a sense of ownership over decisions that have the potential to be contentious, but are of critical significance for health system performance (e.g. the robust enforcement of referral pathways).

Unregulated relationships between pharmaceutical and medical devices companies and healthcare professionals in Uzbekistan can be mired with conflicts of interest as they may lead to systematic biases in patient care. This has also extended to private sector providers that often make payments linked to the referrals for diagnostic and management procedures. Anecdotally, these undue influences by pharmaceutical companies and private sector providers resulted in biases in patient care and a major contributor to inappropriate care (overuse and misuse of care).

#### International experience:

Health systems in the countries of the EU and North America make two broad categories of information available and accessible to the public: documents relating to policy processes and decisions, and data (e.g., performance data). These are regularly posted on the various health system websites. In the UK, the National Health Service (NHS) Statistics website – which publishes statistics to inform debate, decision-making and research both within the Government and by the wider community - provides a good example of data sharing across a range of health and care subjects<sup>51</sup>. Some institutions, such as

<sup>51</sup> NHS England Statistics - <https://www.england.nhs.uk/statistics/>

the OECD and the WHO, have added visualization elements to enhance access to and use of such information<sup>5253</sup>.

Countries in North America and EU have used various approaches to regulating relationships between pharmaceutical companies and healthcare professionals, among which the ones focusing on increasing transparency are the most popular. The US introduced the Physician Payments Sunshine Act that requires all payments meeting a minimum threshold (US\$ 11.64 in 2022) to be publicly disclosed on the Open Payments website.<sup>5455</sup> Similar programs exist in many EU countries, including France and the UK.<sup>56</sup>

**Solution:**

Develop and launch, building on best international practices, an interactive Open Health portal within the MoH website, to serve as a warehouse of health system documents and data, including quality of care data.

Develop, with support from international experts, and approve a list of minimum documents and data to be made available on the Open Health portal, and mandate the frequency of updates for each category of document.

**Expected result:**

Improved accountability in the health system, greater trust, and a sense of ownership among the general public.

<b>Required one-time investment:</b>	US\$ 200,000 (development costs)	<b>Additional burden on the budget:</b>	Not applicable
<b>2023</b>	Develop, with support from international experts, and approve a list of minimally required documents and data to be available on Open Health and mandated frequency of update for each document.	<b>2027</b>	

<sup>52</sup> OECD Health Statistics - <https://www.oecd.org/health/health-data.htm>

<sup>53</sup> WHO European Health For All database - <https://gateway.euro.who.int/en/datasets/european-health-for-all-database/>

<sup>54</sup> <https://www.cms.gov/OpenPayments/Program-Participants/Reporting-Entities/Data-Collection>

<sup>55</sup> <https://www.cms.gov/OpenPayments>

<sup>56</sup> <https://www.u4.no/blog/pharmaceutical-payments-to-healthcare-professionals>



There is a near-total absence of data on health care quality indicators in Uzbekistan. Policy and decision makers, the public, and providers do not have access to data that would enable them to understand the extent to which patients receive safe, effective, or high-quality care.

The absence of indicator data has numerous implications. It means there is no information on which to set local priorities for improved service delivery. Nor is it possible to set targets for improvement or monitor progress over time. Oversight and governance of quality cannot be carried out because the overseeing body cannot hold a health care provider accountable for achieving a desirable result.

In the health care system, there is no single unit or office that is responsible for developing system-wide quality of care indicators, setting data standards, collecting, analyzing, and reporting data.

Uzbekistan has a cumbersome and therefore lengthy clinical guideline development process that is not sufficiently agile to update them on a timely basis when international guidelines change. As a result, the time from when international guidelines change to their being incorporated into the national guidelines, and performance (quality) indicators is very long.

The use of quality-of-care indicators has recently shifted towards linking them to payments, which has limited proven effectiveness.

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### **Best practices:**

There are multiple examples of agencies in other countries developing system-wide quality of care indicators, setting data standards, collecting, analyzing, and reporting data. Some countries choose to put all the above functions into a single agency, while others allocate different tasks to different agencies. Some countries place these functions into a department within the MoH, while others (e.g., Canada) have created a publicly-funded, but independent, arms-length institution. Some countries have more complex arrangements; for example, in the USA, data collection and reporting for the publicly-funded Medicare and Medicaid programs is managed by the federal government's agencies, while data on quality of services provided through health insurance plans are managed by a non-profit organization.

Evidence on the effectiveness of performance-based financing in the area of quality of care is limited.<sup>57</sup> In addition, the use of payment-for-performance in health care can lead to unintended adverse consequences for the quality of care delivered and access to care for high-risk populations - that require more intensive care, with higher risk of undesired outcomes – as observed in Canada.<sup>58</sup>

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### **Solution:**

Establish the Department of Quality of Care Data and Analytics with an initial staffing of at least 10 technical staff within the National Chamber of Innovative Healthcare (or other national level entity).

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<sup>57</sup> Paul, L. Albert, B. N. Bisala, Bodson and e. al., "Performance-based financing in low-income and middle-income countries: isn't it time for a rethink?," *BMJ Global Health*, vol. 3, no. e000664. doi:10.1136, 2018.

<sup>58</sup> K. Kyeremanteng, R. Robidoux, G. D'Egidio, S. M. Fernando and D. Neilipovitz, "An analysis of pay-for-performance schemes and their potential impacts on health systems and outcomes for patients," *Critical Care Research and Practice*, 2019

Define the Department’s core functions as, but not limited to:

- developing and maintaining a national quality of care indicator list
- developing standards for quality of care data sets, including definitions for all variables and reporting protocols
- managing collected quality of care data, including ensuring quality of data
- preparing quality of care reports (for policy and decision-makers, providers and public)
- providing training and certification to health care providers in quality of care data collection, reporting, analysis and interpretation.

Drop plans to implement pay-for-performance schemes to improve quality.

Revise the current practice of all national guidelines being approved by the MoH. Develop more agile processes intended to rapidly adapt changes in international guidelines to the local context.

Adopt a policy of European and American clinical guidelines produced by professional associations to supersede national guidelines where evidence-based critical differences or updates exist.

**Intended outcome:**

Regularly updated national quality of care indicator list based on best international practices available. All indicators have clearly defined data definitions and reporting protocols. Policy and decision makers, providers, and the public has regularly updated information on the quality of services provided. Adoption of changes in international clinical guidance is expedited.

<b>Required one-time investment:</b>	US\$ 100,000 to set up offices for the staff, including computers, furniture, office renovation	<b>Recurrent expenditures from the state budget:</b>	US\$ 120,000 staff (technical and ancillary) and maintenance costs per annum
<b>2023</b>	Establish the Department of Quality of Care Data and Analytics with an initial staffing of at least 10 technical staff within the National Chamber of Innovative Healthcare	<b>2027</b>	Prepare and distribute tertiary care quality of care reports (for policy and decision makers, providers and public) on a quarterly basis
	Prepare a preliminary list of primary care quality-of-care indicators for priority conditions		

Develop standards for quality of care data sets, including definitions for all variables and reporting protocols, for the preliminary list of primary care indicators

Revoke plans to implement pay-for-performance schemes to improve quality in primary care

Develop more agile national guideline development processes intended to rapidly adapt and adopt changes in international guidelines

Adopt a policy of European and American clinical guidelines produced by professional associations to supersede national guidelines where critical differences in evidence-based recommendations exist

**2024**

Train and certify primary care providers in quality of care data collection, reporting, analysis and interpretation

Prepare and distribute quality of care reports in primary care (for policy and decision makers, providers and public) on a quarterly basis

Establish at least three quality improvement hubs in academic institutions to support quality improvement

**2028**

**2025**

Prepare a preliminary list of secondary care quality-of-care

**2029**

indicators for regional multi-specialty hospitals

Develop standards for quality of care data sets, including definitions for all variables and reporting protocols, for the preliminary list of secondary care indicators

Train and certify secondary care providers in quality of care data collection, reporting, analysis, and interpretation

**2026**

Prepare and distribute quality of care reports in secondary care (for policy and decision makers, providers and public) on a quarterly basis

Prepare a preliminary list of tertiary care quality-of-care indicators for national centers of excellence

Develop standards for quality of care data sets, including definitions for all variables and reporting protocols, for the preliminary list of tertiary care indicators

Train and certify health care tertiary care providers in quality of care data collection, reporting, analysis, and interpretation

**2030**

**No.3: Implement a mechanism for the systematic collection of feedback from healthcare workers and patients**

**Problem:**

There is no systematic collection of feedback from healthcare workers to the MoH nor is there routine monitoring in key areas, such as job satisfaction and staff turnover.

Similarly, proactive patient-feedback collection systems are lacking. The existing patient complaints system is reactive in nature and elicits responses only after an adverse incident has taken place.

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**Best practices:**

Routine feedback collection from workers and patients is an integral part of many health systems. For instance, the National Health Service of England (NHS England) has been conducting an annual survey of employee job satisfaction since 2003. In India, a random sample of healthcare workers are surveyed by phone to collect feedback.

Similar feedback collection systems exist for patients. In North America and many countries of Europe, patient experience surveys are widely used to routinely collect patient experience data that is essential to improving patient-centeredness and responsiveness of care. For example, the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) surveys are used in the US, Canada, and in many EU countries.

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**Solution:**

Develop, with support from international experts, a framework and mechanisms for an annual electronic survey of the healthcare workforce on critical human resources issues such as labor protection issues, job satisfaction, working conditions, and remuneration.

Develop, with support from international experts, a framework and mechanisms (including financial) for regular collection and reporting of patient experience measures.

Develop, with support from international experts, national guidelines and recommended policies and procedures for health facilities for complaints management.

Revise the existing complaints management information system in line with the new national guidelines, policies, and procedures for complaints management.

Make public healthcare workforce and patient experience survey and analysis of complaints.

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**Intended outcome:**

Workforce survey findings would help identify and monitor progress on critical human resources issues to help improve job satisfaction and retention of the healthcare workforce.

Patient experience survey would help identify critical gaps in patient experience and take actions to improve patient experience.

<b>One-time investments:</b>	US\$ 300,000	<b>Recurrent expenditures from the state budget:</b>	Salary costs for 10 staff
	To develop framework; to adapt and scientifically validate international surveys and set up systems for routine collection and reporting		
<b>2023</b>	Develop, with support from international experts, framework and mechanisms for an annual electronic survey of the healthcare workforce on critical human resources issues such as labor protection issues, job satisfaction, working conditions, and remuneration.	<b>2027</b>	Implement routine healthcare workforce and patient experience surveys in primary care in remaining regions.
	Develop, with support from international experts, framework and mechanisms (including financial) for regular collection and reporting of patient experience measures.		Implement routine healthcare workforce and patient experience surveys in secondary and tertiary care facilities in two regions.
	Adapt and validate the existing international questionnaire to assess the satisfaction of health workers and patient experience.		Implement routine healthcare workforce and patient experience surveys in private sector facilities in Syrdarya.
<b>2024</b>	Develop, with support from international experts, national guidelines and recommended policies and procedures for	<b>2028</b>	Implement routine healthcare workforce and patient experience surveys in secondary and tertiary care facilities in remaining regions.

	<p>health facilities for complaints management.</p> <p>Revise the existing complaints management information system in line with the new national guidelines, policies, and procedures.</p> <p>Implement routine healthcare workforce and patient experience surveys in primary care in two districts in Syrdarya.</p>		<p>Implement routine healthcare workforce and patient experience surveys in private sector facilities in two regions.</p>
2025	<p>Implement routine healthcare workforce and patient experience surveys in primary care in all districts in Syrdarya.</p> <p>Make public a summary of healthcare workforce and patient experience surveys and complaints</p>	2029	<p>Implement routine healthcare workforce and patient experience surveys in private sector facilities in remaining regions.</p>
2026	<p>Implement routine healthcare workforce and patient experience surveys in primary care in two regions.</p> <p>Implement routine healthcare workforce and patient experience surveys in secondary and tertiary care facilities in Syrdarya.</p>	2030	

**Focus area:** [TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH](#)

**No.4: Enhance the availability and quality of data on vital statistics and notifiable communicable diseases**

**Problem:**

In Uzbekistan, births, and deaths (vital statistics) are recorded electronically by medical institutions in a centralized information system. Recorded data is available to the MoH and the Ministry of Justice for analysis and reporting. Vital statistics in the centralized information system are coded using the International Classification and Diseases of the 10th Revision (ICD-10), approved in 2013, although the latest version, ICD-11, released in 2019, provides more granular data for analysis.

For notifiable disease surveillance and reporting, no unified case definitions are available. As a result, many cases go undetected and unreported - limiting the timeliness and effectiveness of the response. Standard definitions for 9 infections were partially introduced by the MoH Order No. 631 of 2005; however, the process has stalled.

Traffic-related injuries and deaths are rapidly increasing, yet the categories of data critical to informed policy-making in this area is lacking.<sup>59,60,61</sup> According to World Bank estimates, the number of deaths on the roads of Uzbekistan per year is 3,617, the number of serious injuries is over 50,000, and the economic toll is about US\$ 3 billion. The Ministry of Internal Affairs maintains statistics on traffic accidents but not on injuries. The MoH does not have epidemiological surveillance of road traffic crashes and, therefore, has only limited data to inform policy responses, and to evaluate impact. Public health systems should play a more active role in collecting data and acting on road traffic injuries.

In addition, there is no unified electronic surveillance system for notifiable conditions. Electronic tracking for HIV infections, tuberculosis and several other reportable conditions does exist, but they operate independently, with no scope for data exchange.

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### **Best practices:**

Countries in Northern America and EU use standard definitions to report notifiable diseases and vital statistics. Summative data on vital statistics and notifiable diseases is public and regularly updated.

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### **Solution:**

Update a classification system from ICD-10 to ICD-11 in the current electronic vital statistics registration system ("Electronic registration of birth and death, including perinatal death").

Prepare and make publicly available annual analytical reports on mortality and births.

Develop and adopt standard case definitions (based on internationally accepted definitions) for at least 50 notifiable conditions.

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<sup>59</sup> Azami-Aghdash S, Gorji H, Gharaee H et al. Role of health sector in road traffic injuries prevention: a public health approach // Intern journal of preventive medicine. 2021, 150, 12 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8631116/>

<sup>60</sup> World Bank Group. GRSF. road safety country profile. Uzbekistan <https://www.roadsafetyfacility.org/country/uzbekistan>

<sup>61</sup> ADB. Road Safety Report Card for the CAREC Region. July 2022 <https://www.adb.org/publications/road-safety-report-card-carec-region>

Establish an epidemiological surveillance unit on injuries, including traffic injuries and deaths, and self-harm, within the SEWPHS.

Include traffic injuries into a notifiable conditions list.

Prepare and make publicly available annual analytical reports on traffic injuries and self-harm.

Develop a national roadmap of actions to reduce traffic injuries and deaths.

Review existing information systems for notifiable diseases and prepare terms of reference for a unified electronic surveillance system for notifiable conditions.

Implement a unified electronic surveillance system for notifiable conditions.

**Intended outcome:**

Rigorous surveillance / monitoring system to inform data-driven public health action on notifiable diseases. More granular data on vital statistics to inform public health action.

<b>One-time investments:</b>	US\$ 1,000,000 International experts Training Surveillance software development and deployment	<b>Recurrent expenditures from the state budget:</b>	Not applicable
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<b>2023</b>	Update a classification system in the existing electronic system "Electronic registration of birth and death, including perinatal death" from ICD-10 to ICD-11.  Make the online training on vital statistics registration, detection, and reporting of notifiable diseases mandatory for all primary care physicians.  Prepare and make publicly available annual analytical reports on mortality and births.	<b>2027</b>
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Develop standard case definitions (based on internationally accepted definitions) for at least 50 notifiable conditions.

Establish an epidemiological surveillance unit on injuries, including traffic injuries and deaths, and self-harm, within the SEWPHS.

Review, with support from international experts, the existing information systems for notifiable diseases and prepare terms of reference for a unified electronic surveillance system for notifiable conditions.

**2024**

Make the online training on diagnosis and reporting of notifiable diseases mandatory for all primary care physicians.

Adopt, by the MoH order, standard case definitions (based on internationally accepted definitions) for at least 50 notifiable conditions.

Include traffic injuries into a notifiable conditions list.

Prepare and make publicly available annual analytical reports on traffic injuries and self-harm.

Develop a national multi-sectoral roadmap of actions to reduce traffic injuries and deaths.

**2028**

	Develop a unified electronic surveillance system for notifiable conditions.	
2025	<p>Make the online training for notifiable diseases mandatory training for all private sector and public hospital physicians.</p> <p>Implement a national roadmap of actions to reduce traffic injuries and deaths.</p> <p>Implement a unified electronic surveillance system for notifiable conditions.</p>	2029
2026		2030

**Focus area:** [TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH](#)

**No.5: Enhance evidence-based data driven national policy making**

**Problem:**

Sustainable financial and structural mechanisms to support the MoH in evidence-based and data-driven comprehensive policymaking are lacking. While there are multiple vertical structures within the MoH focusing on specific areas, an umbrella unit that brings all these elements together on a strategic way is missing. As a result, information needs for policymaking are addressed by unsystematic, fragmented and often unfunded exercises that affect the quality, timeliness, and comprehensiveness of outputs.

**International experience:**

Countries in North America and EU have institutional and financial structures to ensure data-driven and evidence informed policy making at the national levels.

**Solution:**

Strengthen a strategic planning department within the MoH with expertise in health economics and financing, epidemiology, quality of care, planning and strategy development, and statistics to:

- regularly assess health system performance and service delivery against international best practices,

- generate evidence for policy through commissioning desk reviews, evaluations, implementation research and pilot adoption of new practices/interventions,
- maintain databases of key health system performance indicators, and
- help develop national policies and strategies
- develop five-year strategic plans with operational, measurement and financial metrics.

Require the MoH to prepare and make public annual policy support analytics topics.

Allocate annual research funds from the Republican budget to sectoral ministries to support evidence-based data-driven policymaking.

Allow the MoH to use non-budgetary funds to finance research and just-in-time analytics in support of policy-making, including but not limited to desk reviews, evaluations, implementation research and piloting of new practices/interventions.

Commission, jointly with the Agency of Innovation, nationally representative international surveys and fill critical gaps in data. Prominent examples of international surveys are Demographic and Health Survey, UNICEF Multi-Indicator Cluster Survey, and Nutrition survey.

**Intended outcomes:**

All new policies are supported by in-depth operational, measurement and financial analytics. All policies undergo annual in-depth evaluation to inform course-corrections.

<b>Required one-time investment:</b>	US\$ 500,00 To support training and long-term international expert support	<b>Recurrent expenditures from the state budget :</b>	Research and analytics costs
<b>2023</b>	Train strategic planning department staff in health economics and financing, epidemiology, quality of care, planning and strategy development, and statistics in support of policy making.  Ensure availability of international expert support on a long-term basis in critical health system strengthening areas	<b>2027</b>	

	<p>Require the MoH to prepare and make public annual policy support analytics topics for commissioning</p> <p>Allow the MoH to use non-budgetary funds to finance research and just-in-time analytics in support of policy-making</p> <p>At least two research in support of policy making are financed.</p>	
<b>2024</b>	<p>Publish annually overview and key findings from commissioned analytics</p> <p>At least five research in support of policy making are financed annually.</p> <p>Require each new policy to be supported by series of analytics on impact on outcomes, efficiency, and fiscal space.</p> <p>Make health strategy performance metrics public</p>	<b>2028</b>
<b>2025</b>	<p>Commission biennially, jointly with the Agency of Innovation, international surveys to fill critical gaps in data.</p>	<b>2029</b>
<b>2026</b>		<b>2030</b>

Focus area: **TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH**

**No.6: Establish the Association of Private Medical Institutions**

**Problem:**

The private sector is a major provider of health services in the Republic of Uzbekistan, with an estimated 7,320 private health facilities and 42,080 beds, accounting for more than a quarter of the total number of beds in the country.

There is no platform for formal dialogue between the MoH and the private sector, which makes policy-making in relation to cross-sectoral relations (e.g. changes to regulations or the procedures that govern purchasing arrangements) ineffective and non-transparent.

Existing informal mechanisms do not generate the data needed to make data-driven policies, mobilize support for reform, or protect public interest.

**Best practices:**

Internationally, provider representative organizations engage in formal dialogue with government and inform and influence its decisions. For example, in the US, the American Hospital Association provides information and exerts influence on national policies regarding hospitals.

Similarly, there are also various professional associations in OECD countries that play key roles in a range of regulatory matters, in some cases defining provider entry conditions, and advising on clinical protocols and standards.

**Solution:**

Establish an Association of Private Medical Institutions.

Define the Association of Private Medical Institution's core functions as follows:

- i) undertaking regular studies to identify critical challenges facing private medical institutions,
- ii) preparing and submitting proposals to the Government on the sustainable and complementary development of the private sector, and
- iii) providing legal guidance to private sector providers in disputes with the Government.

**Intended outcome:**

Transparent and effective dialogue between the MoH and private medical institutions.

<b>One-time investments:</b>	Set up costs	<b>Recurrent expenditures from the state budget:</b>	Not applicable
2023	Establish an Association of Private Medical Institutions.	2027	
2024		2028	
2025		2029	

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**Focus Area: TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH**

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**No.7: Improve performance by minimizing institutional conflicts-of-interest****Problem:**

The Medicine Regulatory Authority (MRA), the State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment, is a structural unit of the newly established Agency for the Development of the Pharmaceutical Industry of the MoH (since 2018). As a result of these arrangements, development of the pharmaceutical industry and regulation of the industry are under the control of the same agency, which is against global good practice, is fraught with competing interests, and clearly undermines the regulatory function.

IT-Med, a self-funding entity reporting to the MoH, in the absence of strong digital health policy-making capacity at the MoH level, *de facto* undertakes both regulatory and software development/implementation roles and also shapes digital health policy and agenda. This expanded role creates a set of competing interests.

**Best practices:**

Almost all countries have a specific regulator for medical products – either as part of the MoH, or as a semi-independent or completely independent agency (e.g. the US FDA is a semi-autonomous part of Health and Human Services, Health Canada is semi-autonomous part of the Health Portfolio, the European Medicines Agency is independent, and ANVISA in Brazil is a semi-autonomous part of the MoH). While the exact institutional arrangements vary, very few countries have a pharmaceutical industry development function in a public sector organization, and those that do ensure that this is separated from the organization in charge of regulating the pharmaceutical sector.

Similarly, countries separate regulatory and policy-making functions in relation to digital health from software development for commercial use in digital health. For example, the Office of the National Coordinator for Health Information Technology in the US is the main federal entity charged with coordination of nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information. Its focus is on two strategic objectives – i) advancing the development and use of health IT capabilities, and ii) establishing expectations for data sharing – through establishing standards, certification and data exchange. It does not develop software for commercial use.

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**Solution:**

Separate the Agency for Pharmaceutical Manufacturing Development from the State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment and relocate the Agency for Pharmaceutical Manufacturing Development outside of the MoH.

Evaluate the regulatory system according to the WHO Global Benchmarking Tools and address the Institutional Development Plans (IDP) that are produced.

Establish a pharmaceutical and medical device policy unit within the Ministry of Health.

Review and update, with international expert support, the digital health governance framework for Uzbekistan.

Establish a national digital health governance board with advisory and management functions, including clinical engagement in the implementation of digital interventions, approval of proposed digitalization projects and recommendations for a regulatory framework, and strengthening patient data protection and cybersecurity measures.

Develop, with international expert support, a transparent and agile certification framework for digital health information systems used in the country.

In order to minimize confluence of competing interests, designate the National Chamber of Innovative Healthcare or another national-level entity independent of IT-Med a lead agency for digital health applications certification.

**Intended outcome:**

Independent Agency for the Development of the Pharmaceutical Industry from the structure of the Ministry of Health, in order to minimize conflicts of interest and non-core activities of the Ministry.

Strengthen regulatory capacity to achieve Maturity Level 3 according to the WHO GBT by 2027.

<b>One-time investments:</b>	US\$ 1,000,000 international expert support Certification software development	<b>Recurrent expenditures from the state budget :</b>	Not applicable
<b>2023</b>	Establish an independent Medicines Regulatory Authority of Uzbekistan by transforming	<b>2027</b>	Achieve Maturity Level 3 according to the WHO GBT, validated through an

	<p>State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment</p> <p>Separate Agency for Pharmaceutical Manufacturing Development from State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment and relocate the Agency for Pharmaceutical Manufacturing Development outside the MoH</p> <p>Establish a pharmaceutical and medical device policy unit in the Ministry of Health</p> <p>Review and update, with international expert support, digital health governance framework for Uzbekistan</p>	<p>external international assessment assigned by WHO</p> <p>Require public sector secondary care facilities to use certified digital health applications</p>
<p><b>2024</b></p>	<p>Evaluate the regulatory system according to the WHO GBT and address the Institutional Development Plans that are produced</p> <p>Establish a national digital health governance board, with broad representation, including clinicians and private sector</p> <p>Develop, with international expert support, a transparent and agile certification framework for digital health information systems used in the country</p>	<p><b>2028</b></p> <p>Require private sector facilities to use certified digital health applications</p>

	Make the National Chamber of Innovative Health (or other national level entity) a lead agency responsible for implementation of digital health applications certification	
2025	Implement Institutional Development Plans	2029
	The national digital board reviews all digitalization projects and proposed regulatory changes	
2026	Require public sector primary care facilities to use certified digital health application	2030

**Focus Area: TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH**

**No.8: Improve the availability of data on medicines and medical services**

**Problem:**

There is scant data on the affordability of medicines, or the impact of this expenditure on household finances. However, in 2018, it was estimated that 35% of people in the lowest socioeconomic quintile of Uzbek citizens could not afford the essential medicines they need.<sup>62</sup>

Seventy-five percent of medicines are imported into Uzbekistan (by value), and there is a general perception that medicines are expensive. Medicine prices are also affected by the fragmented procurement of medicines. A substantial share of procurement is undertaken directly by health facilities. In this process, some 700 licensed distributors with widely varying capacity of supply can submit bids, and health facilities select the lowest prices. Beginning in 2022, a new scheme was introduced to centralize the purchase and procurement of some 32 medicines through the MoH and O'zmedimpeks, but a large share of medicine purchase and procurement still remains fragmented. An attempt to centralize the procurement of medicines was also fraught with challenges. For instance, due to lengthy tendering and procurement processes, as of September 2022, health facilities still have not received medications. There appears to have been no needs assessment to tailor the procurement to the health facility needs.

<sup>62</sup> World Bank staff calculations based on the Listening to the Citizens of Uzbekistan survey, 2018

Though Uzbekistan has an Essential Medicines List, approved in 2021 by the MoH,<sup>63</sup> it is not clear how this list was developed - nor how it is used to determine the medicines prioritized for government procurement.

In general, there is a lack of official information on developments, trends, performance, and progress in the pharmaceutical sector, including those relating to regulation, financing, local manufacturing, access to and supply of medicines, affordability, and human resources. This information would be useful for all stakeholders in the country, for making any policy adjustments as well as to external parties including possible investors.

### **Best practices:**

Health Action International (HAI),<sup>64</sup> an international NGO, along with WHO, has developed a methodology to survey medicine prices, availability, affordability, and price components. More than 100 surveys have been done in more than 60 countries including Kazakhstan and Kyrgyzstan in Central Asia. Some national experiences are available in the international literature about what can be learned from medicine pricing surveys and how they have helped to inform decision-making (e.g., Malaysia<sup>65</sup> and Pakistan<sup>66</sup>).

The WHO Model Lists of Essential Medicines serve as a guide for the development and updating of national and institutional essential medicine lists (EML). The WHO list has been reviewed every 2 years since 1979 and is currently in its 22<sup>nd</sup> version. Countries use the list to support the procurement and supply of medicines in the public sector, medicines reimbursement schemes, medicine donations, and local medicine production. According to WHO, more than 155 countries develop and maintain a national EML.<sup>67</sup>

Production of annual reports on developments, trends, performance, and progress in the pharmaceutical sector is a widely accepted practice. For example, such reports are produced in India,<sup>68</sup> Australia,<sup>69</sup> South Africa,<sup>70</sup> UK,<sup>71</sup> USA.<sup>72</sup>

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<sup>63</sup> Order of the Ministry of Health of the Republic of Uzbekistan under #3289 from 23 March 2021 about the approval of the list of essential medicines

<sup>64</sup> <https://haiweb.org/>

<sup>65</sup> [Conducting-a-Medicine-Pricing-Survey-Experience-and-Challenges.pdf \(haiweb.org\)](#)

<sup>66</sup> [Evaluation of prices, availability and affordability of essential medicines in Lahore Division, Pakistan: A cross-sectional survey using WHO/HAI methodology | PLOS ONE](#)

<sup>67</sup> "The WHO Essential Medicines List (EML): 30th anniversary". World Health Organization. Archived from the original on 27 May 2014. Retrieved 26 June 2016.

<sup>68</sup> <https://pharmaceuticals.gov.in/annual-report>

<sup>69</sup> [Annual reports | Therapeutic Goods Administration \(TGA\)](#)

<sup>70</sup> [SAHPRA-202021-Annual-Report.pdf](#)

<sup>71</sup> [United Kingdom drug situation: Focal Point annual report - GOV.UK \(www.gov.uk\)](#)

<sup>72</sup> [2021 Annual Report \(fda.gov\)](#)

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**Solution:**

Carry out bi-annual medicine pricing surveys based on international methodology (e.g., HAI). Make the Pharmaceutical and Medicine Device Unit in MoH responsible for the surveys and for establishing an ongoing price monitoring mechanism.

Set up a National Committee for the Selection and Use of Essential Medicines within the MoH, free of conflicts of interest, consisting of leading experts (national – and international when required) to regularly update the national list.

Revise and update bi-annually the current essential medicines list according to international (e.g., WHO) guidelines for the selection of essential medicines.<sup>73</sup>

Make public the essential medicines list.

Review, with support from international experts, medicine pricing policies.

Develop and make public annual standardized reports on trends, performance, and progress in the pharmaceutical sector, including those in regulation, financing, local manufacturing, access to and supply of medicines, affordability, and human resources. Make the Pharmaceutical and Medicine Device Unit in MoH the lead for the development and publication of annual reports.

Carry out, with support from international experts, an assessment of the public procurement and supply system of medical products and consumables.

Strengthen O'zmedimpeks or another central procurement agency in light with the assessment report to help in consolidating procurement of medicines and consumables in the public sector. As an option, pilot a mechanism where a government agency negotiates the best prices from distributors based on a guaranteed minimum purchase volume and health facilities directly purchase the medicines at the nationally agreed process from the contracted distributors based on their needs.

Develop and implement, with support from international experts, a methodology for consolidating and/or forecasting national needs / regional needs, negotiating prices nationally for medical products, prequalifying suppliers, tendering and supply and training of staff.

Develop and implement, jointly with the State Tax Committee, a unified list of terminology for the mandated recording of fee-based medical and pharmaceutical products and services sales at the point of sale.

Require the State Tax Committee to share with the Pharmaceutical and Medicine Device and Private Sector Units of the MoH anonymized quarterly data on the prices and volumes of services and products sold at the district and regional levels.

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<sup>73</sup> The Selection and Use of Essential Medicines (2021) - TRS 1035. [The Selection and Use of Essential Medicines \(2021\) - TRS 1035 \(who.int\)](#)

**Intended outcome:**

The national essential list is aligned with international recommendations. The MoH has up-to-date information on medicine pricing nationally. Key stakeholders, including the public, are informed of the developments in the pharmacy sector through annual publicly available reports. Medicine prices are minimized through consolidated procurement and pricing review.

<b>One-time investments:</b>	US\$ 500,000	<b>Recurrent expenditures from the state budget:</b>	Survey and expert engagement costs
<b>2023</b>	<p>Carry out bi-annual medicine pricing surveys based on international methodology (e.g., HAI). Make the Pharmaceutical and Medicine Device Unit in MoH responsible for the surveys and for establishing an ongoing price monitoring mechanism.</p> <p>Set up a National Committee for the Selection and Use of Essential Medicines within the MoH, free of conflicts of interest, consisting of leading experts (national – and also international when required) to regularly update the national list.</p> <p>Develop and implement, jointly with the State Tax Committee, a unified list of terminology for mandated recording of fee based medical and pharmaceutical products and services at the point of sale</p>	<b>2027</b>	
<b>2024</b>	<p>Revise and update bi-annually the current essential medicines list according to international (e.g., WHO) guidelines for the selection of essential medicines.</p>	<b>2028</b>	

Make the essential medicines list public.

Review, with support from international experts, medicine pricing policies.

Develop and make public annual standardized reports on trends, performance, and progress in the pharmaceutical sector. Make the Pharmaceutical and Medicine Device Unit in MoH lead for the development and publication of annual reports.

Undertake, with support from an international experts, an assessment of the public procurement and supply system of medical products and consumables.

Require the State Tax Committee to share with the Pharmaceutical and Medicine Device and Private Sector Units of the MoH anonymized quarterly data on the prices and volumes of services and products sold at the district and regional levels.

**2025**

Strengthen O'zmedimpeks or another central procurement agency in light of the assessment report to help consolidate procurement of medicines and consumables in the public sector. As an option, pilot a mechanism where a government agency negotiates

**2029**

the best prices from distributors based on a guaranteed minimum purchase volume and health facilities directly purchase the medicines at the nationally agreed process from the contracted distributors based on their needs.

Develop and implement, with support from international experts, a methodology for consolidating and/or forecasting national needs / regional needs, negotiating prices nationally for medical products, prequalifying suppliers, tendering and supply and training of staff.

2026

2030

**Focus Area:** [TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH](#)

**No.9: Align national pharmacy manufacturing, distribution and retail practices with international best practices**

**Problem:**

To expedite the alignment of local manufacturing practices with international best practices, the government had set a deadline for all manufacturers to fully comply with the national Good Manufacturing Practice guidelines (GMP) by January 2022. The deadline, however, was revised, and a new target date of January 2024 was set through a Presidential decree.<sup>74</sup> Further delays in compliance will have multiple implications that go beyond the continued failure to ensure minimum standards in the local manufacturing of medicines. For example, the GMP guidelines are part of a roadmap to

<sup>74</sup> The latest Presidential decree (No UP-55) was issued in January, 2022 on Additional Measures to Accelerate the Development of the Pharmaceutical Industry of the Republic of Uzbekistan in 2022-2026.

become a member of PIC/S, which will enable Uzbekistan to participate in the conduct and sharing of information amongst regulatory inspectorates with harmonized inspection procedures and common standards, and facilitate the export of locally produced products.

Already, no new pharmaceutical company, distributor, or retail seller is allowed to operate if they do not fully comply with the GMP, GDP, and Good Pharmacy Practice (GPP). These are excellent measures but they do not extend to the existing firms. Uzbekistan has more than 14,000 privately owned pharmacies. Although all of these pharmacies are licensed and obliged to follow Good Distribution, Storage and Pharmacy Practices (GDP), which are conditions of their licenses, most pharmacies do not comply with these good practices.

The government maintains an over-the-counter (OTC) list of medicines, which means all other medicines can be obtained only by prescription. In reality, people can buy any medicine over-the-counter from pharmacies. This is a regulatory enforcement issue.

Irrational use of medicines has serious consequences for both health and household finances. Despite scant local data, there are strong indications that irrational use of medicines is prevalent in Uzbekistan. Beyond irrational prescription / utilization, in part due to cultural norms and low competencies among healthcare workers, there is ample anecdotal evidence that the pharmaceutical industry itself engage in direct-to-consumer advertising in Uzbekistan (which evidence from multiple countries demonstrates is strongly associated with inappropriate prescribing behaviours).

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**Best practices:**

The GMP, GDP and GPP are globally accepted practices.

Countries utilize either OTC or prescription-only medicines lists. While both have advantages and disadvantages, a prescription-only list can help enhance access to medicines in developing country contexts.

Various strategies can encourage appropriate use of medicines, including, educational, regulatory, managerial, and administrative interventions at various levels starting from education and training of medical students to public education on the rational use of medicines. Some countries have established a separate National Drugs and Therapeutic Committee with the sole responsibility of monitoring and promoting rational use, and other countries have included this function in the mandate of the National Committee for the Selection and Use of Essential Medicines.

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**Solution:**

Review licensing procedures for private pharmacies to ensure a stringent, transparent and thorough assessment of compliance to Good Distribution, Storage and Pharmacy Practices.

Reassess all existing private pharmacies for their adherence to good practices in a phased manner.

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Reassess all existing licensed distributors (698) of medical products in terms of compliance to good distribution and good storage practices and make appropriate regulatory decisions to ensure full compliance.

Make public the list of existing local manufacturers who complied with the national GMP and those who did not and would be closed by 1 January 2024.

Develop and implement national bioequivalence guidelines for the scientific confirmation of products that have undergone therapeutic equivalence evaluation.

Publish bioequivalent generic products in a national register.

Develop and host on the national learning management platform online training courses on the implementation of GMP, GDP, and GPP.

Join the Pharmaceutical Inspection Cooperation Scheme (PIC/S) to allow Uzbekistan to participate in inspections and information exchange between regulatory inspections through harmonized verification procedures and common standards, and facilitate the export of locally produced products.

Develop, with support from international experts, a national list of prescription-only medicines to replace the current over-the-counter list.

Review and revise, with support from international experts, the current regulations for direct-to-consumer marketing and advertisement of medical products.

Establish of Drugs & Therapeutics Committees in family medicine polyclinics, district and regional multispecialty hospitals to support health facilities in reducing irrational use of medicines.

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**Intended outcome:**

Improved quality and accessibility of medicines by ensuring:

- only local manufacturers compliant with the national GMP standards are allowed to manufacture pharmaceutical products; and
- only distributors and retailers compliant with the national GDP and GPP standards are allowed to operate.

Reduced irrational use of medicines through:

- establishment of Drugs & Therapeutics Committees to support health facilities; and
- updated regulations for direct-to-consumer marketing and advertisement of medical products that meet international best practices.

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**One-time investments:**

US\$ 500,000

**Recurrent expenditures from  
the state budget :**

Not applicable

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<p><b>2023</b></p>	<p>Develop and implement national bioequivalence guidelines for the scientific confirmation of products that have undergone therapeutic equivalence evaluation.</p> <p>Review licensing procedures for private pharmacies to ensure a stringent, transparent and thorough assessment of compliance to Good Distribution, Storage and Pharmacy Practices.</p>	<p><b>2027</b></p>	<p>Reassess existing private pharmacies for their adherence to good practices in the remaining regions.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in family medicine polyclinics in remaining regions.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in district and regional hospitals in two regions.</p> <p>Join the Pharmaceutical Inspection Cooperation Scheme (PIC/S)</p>
<p><b>2024</b></p>	<p>Make public the list of the existing local manufacturers who complied with the national GMP and those who did not and were closed by 1 January 2024.</p> <p>Publish bioequivalent generic products in a national register.</p> <p>Reassess existing private pharmacies for their adherence to good practices in Syrdarya.</p> <p>Reassess existing medicine distributors for their adherence to good practices in Syrdarya.</p> <p>Develop, with support from international experts, and approve a national list of prescription-only medicines to replace the current over-the-counter list.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in family medicine polyclinics in Syrdarya.</p>	<p><b>2028</b></p>	<p>Establish and train Drugs &amp; Therapeutics Committees in district and regional hospitals in remaining regions.</p>

2025	<p>Reassess existing private pharmacies for their adherence to good practices in two regions.</p> <p>Reassess existing medicine distributors for their adherence to good practices in four regions.</p> <p>Review and revise, with support from international experts, the current regulations for direct-to-consumer marketing and advertisement of medical products.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in family medicine polyclinics in two regions.</p>	2029
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2026	<p>Reassess existing private pharmacies for their adherence to good practices four regions.</p> <p>Reassess existing medicine distributors for their adherence to good practices in the remaining regions.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in family medicine polyclinics in four regions.</p> <p>Establish and train Drugs &amp; Therapeutics Committees in district and regional hospitals in Syrdarya.</p>	2030
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**Focus area: TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH**

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**No.10: Establish a National Center for Public Health to ensure a holistic approach to public health challenges and responses**

**Problem:**

The current organizational structure of the republican SEWPHS, a key public health agency, reflects the structure designed to address communicable diseases. Such diseases once accounted for most of the disease burden in Uzbekistan, but this is no longer the case. Therefore, all the public health essential functions for non-communicable diseases and injuries, including surveillance and prevention, are outside the purview of the SEWPHS. This leads to fragmentation in public health data and impeded the effectiveness of public health responses. The newly established Center for Health Promotion aims to fill some of these gaps, but it is unable to tap into SEWPHS's resources, for example for surveillance and monitoring functions, and thus cannot capitalize on potential economies of scale. It also does not have its own laboratory systems or other resources necessary to provide effective public health care.

The result is a fragmented approach to public health, with multiple independent players and no unified approach to prevention and health promotion. As a result, many key areas of public health concern, such as mental health, maternal and child health, and traffic injuries are not fully captured in the system for public health data and action.

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**Best practices:**

While in some countries, such as the UK and Australia, communicable and non-communicable disease surveillance and response are managed by separate entities, the prevailing model, which fosters joint use of resources, is for a single entity to be responsible for public health surveillance and response. For example, the Public Health Agency of Canada's and the US CDC's role covers both communicable and not-communicable conditions by focusing on preventing disease and injuries, responding to public health threats, promoting good physical and mental health, and providing information to support informed decision-making.

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**Solution:**

Merge the Center for Health Promotion and SEWPHS to establish a National Center for Public Health.

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Approve a new structure for the National Center for Public Health that has new departments to support 1) epidemiological surveillance of non-communicable diseases, 2) epidemiological surveillance of maternal and child health, 3) epidemiological surveillance of the determinants of health.

Implement the revised structure of the national center for public health in phases to ensure that goals, objectives for newly established department are clearly formulated, and staff are trained to undertake these new roles.

Ensure long-term engage with international public health agency to build local capacity and effective structure for surveillance and action

**Intended outcome:**

Holistic approach to public health surveillance and action for communicable and non-communicable diseases.

<b>One-time investments:</b>	Reorganizational and training costs	<b>Recurrent expenditures from the state budget :</b>	Additional staff salary costs
2023	Merge Center for Health Promotion and the SEWPHS to establish the National Center for Public Health	2027	
2024	Ensure long-term engage with international public health agency to build local capacity and effective structure for surveillance and action	2028	
2025		2029	
2026		2030	

**Focus area: TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH**

**No.11: Strengthening the national laboratory system**

**Problem:**

There are two critical laboratory systems in the country – one for public health, one for clinical services - that operate in a segmented manner.

The Sanitary and Epidemiological Wellbeing and Public Health Service (SEWPHS) has an excessive laboratory service network comprised of 378 laboratories. The operational norms of the laboratory services network are largely unchanged from those put in place during Soviet Union times, based on the technologies available at that time; and its infrastructure does not support provision of high-quality, timely testing. For example, laboratory information systems are available in only two PH laboratories in the country. The laboratories are also not equipped with modern equipment and devices, are not accredited to meet international requirements.<sup>75</sup> Referral and confirmation procedures are limited. Laboratories are known to exist in areas that face daily interruptions in the provision of tap water and electricity (refrigerators are turned off due to systematic blackouts) and there are no generators for backup.

The clinical laboratory system is comprised of public sector and private sector laboratories. While a limited quality assurance system exists in public sector laboratories, it is not mandatory for all laboratories and does not cover private sector laboratories. Thus, the MoH and the public have limited information on the quality of testing and tools to assure minimum standards in laboratory services in the public and private sectors. In addition, information exchange (interoperable information) is underdeveloped across the network.

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**Best practices:**

The US, with almost ten times the population and twenty times the area of Uzbekistan, has approximately 300 public health laboratories, compared to 378 public health laboratories in Uzbekistan.

Specialized laboratory certification programs to assure minimum standards are common in many countries. For example, in the US, the Clinical Laboratory Improvement Amendments (CLIA) program regulates all laboratories (over 330,000 laboratories) that test human specimens and ensures laboratories produce accurate, reliable, and timely patient test results regardless of where the test is performed. CLIA has several types of certificates for laboratories performing tests of varying complexity.<sup>76</sup>

Internal and external quality assurance mechanisms are an essential part of laboratory operations in well-developed health systems.

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**Solution:**

Undertake a comprehensive assessment of public health laboratories, including the assessment of equipment inventory and performance.

Develop, with international expert support, a master plan for reorganization of public health laboratory network to replace the currently fragmented, district-based network into fewer, but better integrated

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<sup>75</sup> Materials of the meeting organized by the WHO office in Tashkent “Uzbekistan. Joint External Evaluation” Tashkent, May 16-20, 2022

<sup>76</sup> <https://www.cms.gov/regulations-and-guidance/legislation/clia>

and higher capacity laboratory hubs, with 24/7 service availability, proper logistic support, and all the equipment necessary for a modern laboratory, with associated information systems.

Develop and implement, with international support, a transparent laboratory certification framework for public health and clinical laboratories.

Develop and implement, with support from international experts, a transparent internal and external quality assurance framework for public health and clinical laboratories.

Create a minimum set of terminology and exchange standards for laboratory services.

Implement data exchange among public health, clinical, environmental and veterinary laboratories.

**Intended outcome:**

Efficient and agile public health laboratory system. Ensure quality of testing in public health and clinical laboratories.

<b>One-time investments:</b>	US\$ 300,000 Master planning	<b>Recurrent expenditures from the state budget :</b>	Not Applicable
	More cost data available after master plan implementation in one region		
<b>2023</b>	Undertake a comprehensive assessment of public health laboratories, including the assessment of equipment inventory and performance.	<b>2027</b>	Implement a master plan for reorganization of public health laboratory network in four regions  Implement, with international support, a transparent laboratory certification framework for public health and clinical laboratories two regions  Implement, with support from international experts, a transparent internal and external quality assurance framework for public health and clinical laboratories two regions
<b>2024</b>	Develop, with international expert support, a master plan for reorganization of public	<b>2028</b>	Implement a master plan for reorganization of public health laboratory network in four regions

	<p>health laboratory network to replace the current excessively large inefficient district based network with high capacity fewer laboratory hubs with 24/7 service availability, proper logistic and equipped with modern laboratory technology and information systems.</p>		<p>Implement a transparent laboratory certification framework for public health and clinical laboratories two regions</p> <p>Implement a transparent internal and external quality assurance framework for public health and clinical laboratories four regions</p>
2025	<p>Develop, with international support, a transparent laboratory certification framework for public health and clinical laboratories</p> <p>Develop, with support from international experts, a transparent internal and external quality assurance framework for public health and clinical laboratories</p> <p>Implement a master plan for reorganization of public health laboratory network in Syrdarya</p>	2029	<p>Implement a master plan for reorganization of public health laboratory network in three regions</p> <p>Implement a transparent laboratory certification framework for public health and clinical laboratories three regions</p> <p>Implement a transparent internal and external quality assurance framework for public health and clinical laboratories four regions</p>
2026	<p>Implement a master plan for reorganization of public health laboratory network in two regions</p> <p>Implement, with international support, a transparent laboratory certification framework for public health and clinical laboratories in Syrdarya</p> <p>Implement, with support from international experts, a transparent internal and external quality assurance framework for public health and clinical laboratories in Syrdarya</p>	2030	<p>Implement a transparent internal and external quality assurance framework for public health and clinical laboratories three regions</p>

Create a minimum set of terminology and exchange standards for laboratory services

**Focus area:** TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH

**No.12: Reduce care costs arising from growing antimicrobial resistance (AMR)**

**Problem:**

WHO has identified AMR as one of the ten global most important threats to human health. While no local data is available, it is estimated that every year, 700,000 deaths worldwide are associated with infections associated with drug-resistant pathogens.<sup>77 78</sup>

In addition to death and disability, AMR leads to lengthening of hospital stays, and requires more expensive methods of treatment. Resistance to inexpensive and effective drugs is emerging at an alarming rate. This entails a sharp increase in the cost of treating common infections.

The main factor in the emergence of drug-resistant pathogens is the inappropriate and excessive use of antimicrobial medications.<sup>79</sup> The widespread availability of antibiotics, inappropriate use of antibiotics by the population, and excessive and inappropriate prescription by physicians are all major risk factors for AMR in Uzbekistan. Widespread and uncontrolled use of antibiotics by veterinarians and in the plant protection service are also major concerns. This has resulted in increased contamination of the environment, soil, and water with microorganisms resistant to antibiotics. However, data on AMR of the locally circulating microorganisms is not available on a systematic basis to care providers to inform care plans and thus leads to increased cost and patient harm due to inappropriate care.

**Best practices:**

In 1998, EU countries funded the EARS-Net, a network of national surveillance systems. The network collects data from member states on seven key pathogens. Data that originates from national AMR initiatives are uploaded to the central European Center for Disease prevention and control (ECDC) database, and annual reports are posted publicly on the website as open access, interactive data that allows for the creating of maps and reports at the country level.

<sup>77</sup> WHO Euro. A health perspective on the role of the environment in One Health, 2022.

<https://apps.who.int/iris/bitstream/handle/10665/354574/WHO-EURO-2022-5290-45054-64214-eng.pdf?sequence=1&isAllowed=y>

<sup>78</sup> WHO Euro. Central Asian and European Surveillance of Antimicrobial Resistance. Annual report 2020 .pdf

<sup>79</sup> Holmes AH, Moore LSP, Sundsfjord A, et al. Understanding the mechanisms and drivers of antimicrobial resistance. Lancet 2016; 387:176–87. DOI: [10.1016/S0140-6736\(15\)00473-0](https://doi.org/10.1016/S0140-6736(15)00473-0)

**Solution:**

Develop and adopt a National Antibiotic Resistance Control Plan 2030 with the National Center for Antimicrobial Resistance as the leading body. It will coordinate activities across the public health, veterinary medicine, plant protection services, and ecology sectors.

Establish sentinel AMR surveillance in two regions.

Prepare quarterly AMR reports on resistance of local circulating microorganisms shared with health facilities and made public to inform on the rational use of antibiotics.

Establish mechanisms for systematic assessment and public reporting of antibiotics in food.

Develop a mandatory online training for primary care physicians on appropriate antibiotic selection and use principles.

**Intended outcome:**

Reduce healthcare costs due to AMR through a local data-informed action.

<b>One-time investments:</b>	US\$ 300,000	<b>Recurrent expenditures from the state budget :</b>	US\$ 10,000 Equipment maintenance and consumable costs in sentinel sites.
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<b>2023</b>	Develop and adopt a National Antibiotic Resistance Control Plan 2030 with the National Center for Antimicrobial Resistance as a leading body coordinating activities across public health, veterinary medicine, plant protection services, and ecology sectors.	<b>2027</b>	Online training for primary care physicians on appropriate antibiotic selection and use principles is mandatory in six regions.
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<b>2024</b>	Establish sentinel AMR surveillance in two regions.	<b>2028</b>	Prepare quarterly AMR reports on resistance of local circulating microorganisms shared with health facilities and made public to inform on the rational use of antibiotics.
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	Develop a mandatory online training for primary care physicians on appropriate antibiotic selection and use principles.	
2025	Implement mechanisms for systematic assessment of food for antibiotics.  Prepare and make public quarterly reports on findings from systematic assessments.  Undertake an annual study on inappropriate antibiotic prescribing.  Online training for primary care physicians on appropriate antibiotic selection and use principles is mandatory in two regions.	2029
2026	Online training for primary care physicians on appropriate antibiotic selection and use principles is mandatory in six regions.	2030

**Focus area:** [TOWARD A MORE DATA-DRIVEN, TRANSPARENT, STRATEGIC, AND EFFECTIVE MINISTRY OF HEALTH](#)

**No.13: Achieve the commitment to allocate 15.4 percent of the government budget to health**

**Problem:**

As outlined in sections above, the health care system in Uzbekistan is subject to many sources of inefficiency. However, the health care system is also seriously underfunded – and thus, even as the main causes of inefficiency are addressed, gaps in service provision and coverage will remain in the absence of additional funds. One indicator of underfunding is the extent of out-of-pocket payments – which are estimated to account for approximately 60 percent of total health expenditure in Uzbekistan, a figure that has grown in recent years.<sup>80</sup> As a result, patients face significant direct costs - which

<sup>80</sup> World Bank Development Indicators 2022

represent an important financial barrier to access, and, when incurred, can be catastrophic and impoverishing – and this is the case for a broad range of clinical services, medicines, and diagnostic tests, including many that are (formally) part of the state-guaranteed benefit package.

Per capita public spending on health increased in real terms from US\$ 37 in 2010 to approximately US\$ 60 in 2021. Despite this, total health expenditure remains low by LMIC standards – and is much lower than is required to provide a basic set of health services for free or at low cost to the entire population. Hence, even at the primary health care level, where health care is as a matter of government policy free for all, households still incur significant costs for medicines and diagnostic services. Not surprisingly, in 2018, it was estimated that 14.4% of households in the country were exposed to catastrophic health expenditures, and 2.5% of the population fell below the poverty line as a result of household spending on health care. Based on the size of the population of Uzbekistan in 2018, this implies that about 2400 people per day are newly impoverished due to such costs.

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**Best practices:**

Out-of-pocket payments for countries in the European and Central Asian region were, on average, 34.2 percent of total health expenditure in 2019. For the member states of the European Union, the average was even lower (15.5 percent of total health expenditure). Reviews of international studies recommend setting a target for public health expenditure of US\$ 86 per capita to promote universal access to primary health care and reduce out-of-pocket payments in low-income and lower-middle-income countries. This suggests that the current government health expenditure of US\$ 60 on health per capita is too small to ensure universal, affordable access to basic services for the population of Uzbekistan.

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**Solution:**

Achieve the commitment to allocate at least 15.4 percent of the government budget to the health sector, and maintain this until 2030.

Mobilize additional resources available from the increased share of health expenditures in the total government budget to address gaps in provision and coverage, and to support the implementation of the Strategy.

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**Intended outcome:**

Improved availability of resources to support the transformation of the health system through the implementation of the Strategy.

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<b>One-time investments:</b>	Not applicable	<b>Recurrent expenditures from the state budget:</b>	To be estimated based on projected total government expenditure growth
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<b>2023</b>	Achieve the allocation to health as a share of the government budget to 11.5 percent <sup>81</sup>	<b>2027</b>	Achieve the allocation to health as a share of the government budget to 15 percent
<b>2024</b>	Achieve the allocation to health as a share of the government budget to 12 percent	<b>2028</b>	Achieve the allocation to health as a share of the government budget at 15.4 percent
<b>2025</b>	Achieve the allocation to health as a share of the government budget to 13 percent	<b>2029</b>	Maintain the allocation to health as a share of the government budget at 15.4 percent
<b>2026</b>	Achieve the allocation to health as a share of the government budget to 14 percent	<b>2030</b>	Maintain the allocation to health as a share of the government budget at 15.4 percent

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<sup>81</sup> Allocation to health as a share of the government budget in 2023 is estimated at 11 percent