REVIEW OF PUBLIC HEALTH EXPENDITURE IN THE REPUBLIC OF TAJIKISTAN

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WORLD BANK GROUP
Health, Nutrition & Population

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Health, Nutrition and Population (HNP) Discussion Paper

Review of Public Health Expenditures in the Republic of Tajikistan

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Abstract:

This Public Expenditure Review updates previous assessments of the levels and efficiency of health financing in Tajikistan and its consequences for healthcare access and health of the Tajik population. Funding for the public healthcare system which provides almost all healthcare remains far short of levels required to provide a universal basic benefit package. As a result, household out-of-pocket payments account for most healthcare spending in the country, and Tajiks frequently forgo needed care for financial reasons. The underfunding of public healthcare in part results from an overall lack of public revenues. It is, however, exacerbated by the health sector enjoying limited priority, with a health share in total government spending far below internationally recognized targets. Inefficiencies in the spending of the limited public funds further undermine the system's ability to provide the population with basic healthcare of appropriate quality. Despite efforts in the past two decades to introduce elements of strategic purchasing and direct a higher share of funding towards primary care, public health financing in Tajikistan still largely follows the centrally planned, hospital-focused, and mainly input-financed Semashko model. The result are substantial regional inequalities in per capita government health spending which reflect differences in health facility and health worker densities rather than healthcare need, a continued overemphasis on hospital and specialist care, and an inability of facility managers to take efficiency-oriented staffing decisions. Key recommendation to address these shortcoming are that a substantially higher share of public revenues be allocated to the health sector, that an independent, single payer organization, a fully-fledged capitation mechanism for primary care and elements of strategic purchasing for inpatient care be gradually introduced, and that current benefit packages are revised and extended to achieve more rational and equitable healthcare utilization. Broad consensus building among stakeholders will be essential for the success of such reforms.

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ABBREVIATIONS

ANC	Antenatal care	MICS	Multiple Indicator Cluster Survey
BBP	Basic Benefit Package	MoF	Ministry of Finance of the Republic of Tajikistan
DALY	Disability-adjusted life year	MoSPH	Ministry of Health and Social Protection of the Republic of Tajikistan
DHIS	District Health Information System	NCD	Noncommunicable disease
DHS	Demographic and Health Survey	NHA	National Health Accounts
GBAO	Gorno-Badakhshan Autonomous Oblast	OOPE	Out-of-pocket health expenditure
GDP	Gross domestic product	PBF	Performance-based financing
GHED	Global Health Expenditure Database	PCF	Per capita financing
GNI	Gross national income	PHC	Primary health care
HSIP	Health Service Improvement Project	RRS	Rayons of Republican Subordination
ICMI	Integrated Management of Childhood Disease Program	STEPS	Stepwise Approach to Surveillance Survey
ILO	International Labour Organization	TJS	Tajik Somoni
IMF	International Monetary Fund	UHC	Universal Health Coverage
LIC	Low-income country	US$	United States Dollars
LITS	Living in Transition Survey	WDI	World Development Indicators
L-MIC	Lower middle-income country	WEO	World Economic Outlook
MCH	Maternal and child health	WHO	World Health Organization

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ACKNOWLEDGMENTS

Authors' Contributions

SN conceptualized and carried out the statistical and qualitative analysis and wrote the first and final manuscripts. FE and HD collected and contextualized data and provided information about the organizational structure of the Tajik health care system and about recent health financing reforms. KM supported data interpretation, provided guidance, and critically reviewed the final manuscript.

EXECUTIVE SUMMARY

The Tajik health care system remains similar to the Soviet Semashko model that preceded it. It is characterized by central planning, a decentralized administrative structure, input-based financing, and the public sector providing almost all health care. Funding for public health care comes from general taxation, foreign aid, and formal as well as informal user payments.

Despite the public sector's prominent role in health care delivery and rapid growth of government health expenditures over the past decade, they amounted to just US$18 per capita in 2018–far short of the estimated US$40–US$80 needed to provide basic health coverage to the population. Consequently, households' out-of-pocket payments—primarily for medicines—account for two thirds of total health spending. Compared to other government sectors, health enjoys limited priority in Tajikistan. At only 7 percent, the share of health in total government spending is the lowest in Central Asia and falls far short of the 15 percent recommendation of the Abuja declaration.

The input-based allocation of public health care financing is the leading cause of inefficiencies in the Tajik health care system. It causes substantial regional inequalities in per capita government health care spending, which reflect differences in health facility and health worker densities—and not health care demand or need—and tweaks funding toward hospital and specialist care, while cost-efficient primary care remains woefully underfunded. Moreover, rigid input-based financing disincentivizes the reduction of hospital beds, which are on average only occupied 65 percent of the time, and impedes efficiency-oriented staffing decisions.

Insufficient and inefficient public health care spending leads to inadequate health care quality, health care underutilization, and high exposure to the financial burden of ill-health among Tajiks. As a result, despite substantive progress in last two decades, Tajikistan continues to trail other Central Asian countries in key health indicators such as life expectancy, child mortality, and stunting, which causes a substantial loss of human capital. It is estimated that altogether, an estimated 9,400 deaths per year could be avoided in Tajikistan by better health care access and quality.

Preliminary data indicate that public health care spending increased steeply in the wake of the COVID-19 pandemic. However, as the increase is chiefly driven by a large increase in foreign aid, it is unlikely to be sustained in the medium and long run without a substantial increase in domestic health care funding. The attention COVID-19 has brought to the health sector may provide a window of opportunity for such a funding increase and the implementation of efficiency-enhancing reforms, which have long been on the policy agenda.

The report recommends the following to improve the health care system in Tajikistan over the short to medium term:

- Double the health sector share of total government spending from the 7 percent pre-COVID-19 to the recommended 15 percent through reallocation of public revenues from low priority programs in other government sectors.
- Increase excise taxes on tobacco, alcohol, and other unhealthy consumption goods like sugary beverages, primarily as a tool to encourage healthy behaviors and decrease health care costs in the medium term;

- Introduce strategic purchasing, namely by replacing the still largely input-based financing of primary care with a full-fledged capitation mechanism, and gradually complementing global hospital budgeting with case-based and fee-for-service financing elements. As purchaser, gradually introduce an independent, single payer organization which could be preceded by regional payer organizations as currently piloted in Sughd oblast;
- Extend effective public health coverage by including outpatient drugs in the benefit package, tightening drug pricing regulation, broadening the population eligible for user fee exemptions, and systematically updating facility infrastructure and equipment;
- Undertake analysis identifying hospital bed and health workforce redundancies and potential for consolidating health care facilities;
- Continue to invest in the improvement of health worker knowledge and the quality of clinical practice;
- Give greater attention to consensus building and the political economy around the recommended policy changes and reforms to ensure full and sustained implementation with maximum stakeholder buy-in.

PART I – INTRODUCTION

Health sector public expenditure reviews are one of the World Bank's core diagnostic tools for informing various stakeholders about the state of health financing in a country. The reviews assess the overall levels, efficiency, effectiveness, and equity of public health expenditures in a country, and relate them to key health system outputs and outcomes. These assessments use various benchmarks, like comparisons with countries in the same region or income group, or progress toward national and international policy goals, such as Universal Health Coverage. Based on these analyses, public expenditure reviews provide policy recommendations to help client countries improve health sector performance.

This report is the latest in a series of health sector public expenditure reviews for Tajikistan (World Bank 2005, 2008, Giuffrida, Msisha, and Barfieva 2013). Most of the data it uses comes from before the onset of the COVID-19 pandemic with its profound economic, social, and health system disruptions, and great uncertainty about the pandemic's future trajectory and its impacts remains. At the time of writing, a growing number of countries have been starting to roll out vaccines while strengthening other prevention measures, creating hopes for a global recovery. The organizational and financial strain on health care systems from the disease itself, as well as from the added fiscal constraints from the global economic downturn will, however, likely persist in the coming years. The analyses and recommendations of this paper are thus only made timelier by the pandemic.

The remainder of this paper is organized as follows: Part 2 describes the economic, political

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Box 1: Key Messages of This Report

- Current total health spending in Tajikistan is insufficient to provide the minimum level of services needed to meet the rapidly changing health needs of the Tajik population.
- The health sector is currently given low priority in government spending. To ensure access to basic health services and protect the population from high out-of-pocket medical spending, public health care spending must increase substantially.
- Increases in public health care spending need to be coupled with reforms that increase the efficiency of the health system:
  - Move from input-based to strategic financing and gradually introduce of a single, independent payer agency;
  - Continue to reconfigure the health system toward primary and outpatient care;
  - Implement nationwide a single, evidence-based benefit package that includes outpatient drugs;
  - Identify and address possible health care infrastructure and health workforce redundancies;
  - Continue to invest in the improvement of health worker knowledge and the quality of clinical practice;
  - Tighten pharmaceutical regulation.

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and demographic context in Tajikistan, including the most recent macroeconomic projections. Part 3 gives an overview of the health system, introducing its main stakeholders, modes of health care delivery, public benefit packages, and the processes of public health care budgeting and provider payment. Part 4 outlines trends and future challenges for population health and Part 5 presents findings on health care access and utilization. Part 6 discusses the levels and efficiency of health care spending, with discussions of its private, external, and, in particular, its public components. Subsequently, Part 7 assesses impacts of recent health financing reforms, namely the introduction of per-capita and performance-based financing of primary health care, and the effectiveness of Tajikistan's two current public health care benefit packages. Part 8 concludes with a number of policy options to achieve higher levels and enhanced effectiveness and efficiency of public health care spending.

PART 2 – ECONOMIC AND DEMOGRAPHIC CONTEXT

GEOGRAPHY AND DEMOGRAPHY

Tajikistan, the smallest Central Asian country by geographic extension, is divided into five administrative zones. Tajikistan is a landlocked Central Asian country bordering Uzbekistan to the west, the Kyrgyz Republic to the north, China to the east, and Afghanistan to the South (Figure 2.1). At 143,100 km^2, it is the smallest country by surface area in the Central Asia region which, apart from Tajikistan, includes Kazakhstan, the Kyrgyz Republic, Turkmenistan, and Uzbekistan.[1] Administratively, at the first level below the central (*republican*) tier, Tajikistan is divided into three regions (Sughd and Khatlon *oblasts* and Ghorno-Badakhshan Autonomous Oblast, GBAO), the Region of Republican Subordination (RRS) consisting of thirteen districts (*rayons*) and cities, and the capital city of Dushanbe. At the second administrative level are 14 cities and 38 rayons. The rayons, in turn, include 368 rural municipalities (*jamoats*) and 65 towns at the third administrative tier, which are further subdivided into villages (*deha*).

Figure 2.1: Political Map of Tajikistan

Source: World Bank.

Figure 2.2: Population Size in Central Asia, 2020
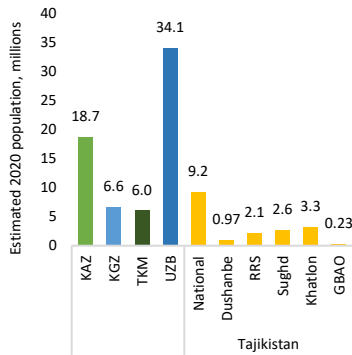
Figure 2.3: Population Density in Central Asia, 2020
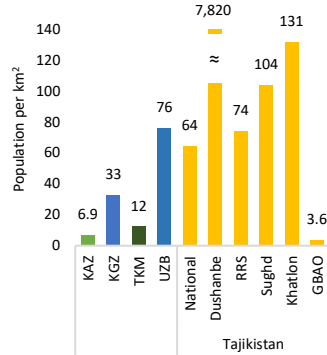
Figure 2.4: Trends in Urbanization in Central Asia, 2010–2020
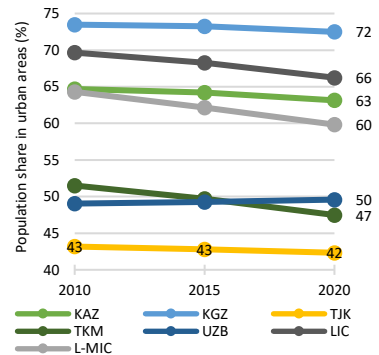
Source: Estimates for Tajikistan and its regions from Tajik Ministry of Health and Social Protection and from World Development Indicators for other Central Asian countries. Population densities computed by author.
Notes: KAZ = Kazakhstan, KGZ = Kyrgyz Republic, TKM = Turkmenistan, UZB = Uzbekistan, LIC = Low-income country population-weighted average, L-MIC = Lower middle-income country population-weighted average.

Tajikistan's population, which has now reached 9 million, is the fastest growing, youngest and least urbanized in Central Asia. With an estimated 9.2 million inhabitants as of 2020, Tajikistan is the third largest country in Central Asia by population, with Khatlon oblast the most populous region (Figure 2.2). Very few people live in vast GBAO, where the population density stands at just 3.6 inhabitants per square kilometer (Figure 2.3). Dushanbe, now approaching one million residents, is the largest city by far. The overall urbanization rate has remained constant, at just over 40 percent, over the last decade, and is the lowest in Central Asia (Figure 2.4). High fertility, with an estimated 3.5 births per woman, is the main driver of Tajikistan's rapid population growth, which, at around 2.5 percent per year, is substantively higher than anywhere else in Central Asia (Figure 2.5 and Figure 2.6). Consequently, the median population age in Tajikistan, at 22.4, is far below that of its neighbors, and the age-dependency ratio substantively higher, with 68 people below age 15 or above age 64 per 100 people of working age (Figure 2.7 and Figure 2.8).

Figure 2.5: Trends in Population Growth in Central Asia, 2012–2019
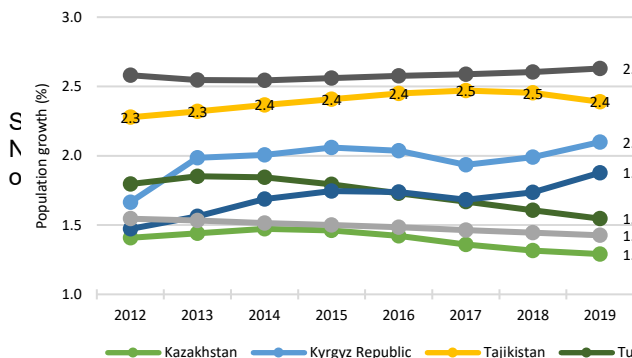
Figure 2.6: Trends in Total Fertility Rates in Central Asia, 2008–2018

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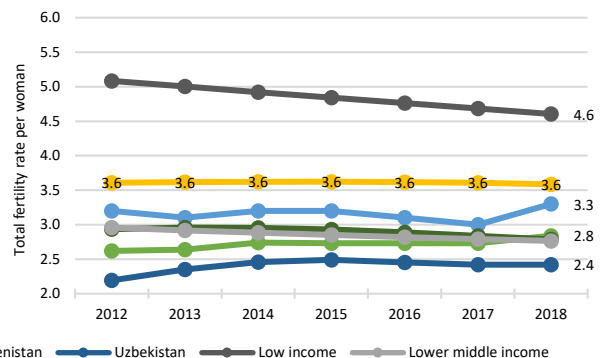
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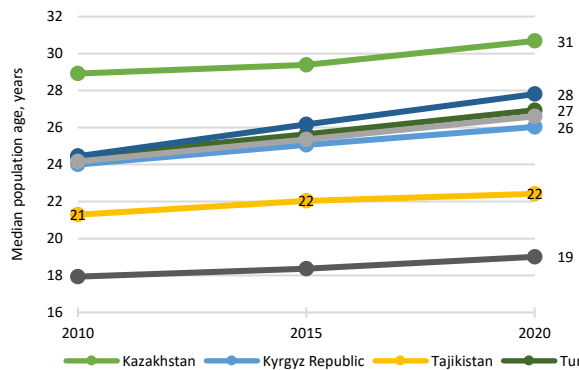
Figure 2.8: Trends in Age-Dependency Ratios in Central Asia, 2010–2020

Kazakhstan · Kyrgyz Republic · Tajikistan · Turkmenistan · Uzbekistan · Low income · Lower middle income
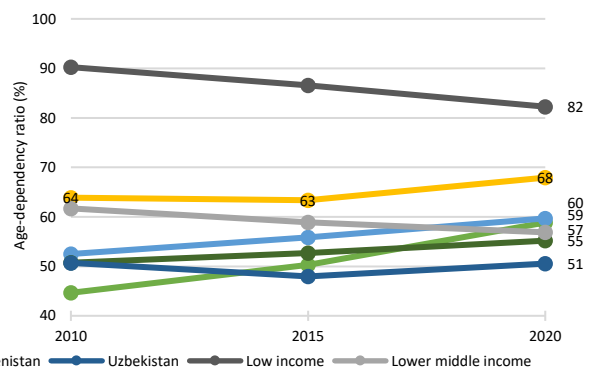
Source: Median age estimates from United Nation's World Population Prospects 2019 Revision and age-dependency ratio estimates from World Development Indicators.
Notes: Age-dependency ratio defined as proportion of dependents—people younger than 15 or older than 64 – per 100 working-age population, those ages 15–64.

Tajikistan is a primarily Muslim, multiethnic country where Uzbeks form the largest minority. An estimated 98 percent of Tajiks are Muslims. The largest ethnic minority are Uzbeks, with an estimated population share of 13.8 percent that is primarily concentrated in the Sughd region. It is assumed that Tajik is the first language for around 80 percent of the population, with Russian being used frequently in government and business affairs. Officially, literacy is near universal and compulsory schooling comprehensively enforced, but adjusted for education quality, the expected number of years of schooling is just 6.8 (World Bank 2020b).

POLITICAL SYSTEM AND ECONOMY

Tajikistan is a presidential republic with four tiers of legislature and government. Tajikistan has been led by its current President, Emomali Rahmon, since 1992—first as head of state, and after the country became a presidential republic in 1994, as president. The president is directly elected and appoints the prime minister. The Supreme Assembly (*Majlisi Oli*), Tajikistan's national level legislative body, is bicameral, consisting of the directly elected Assembly of Representatives (*Majlisi namoyandagon*) and the National Assembly (*Majlisi milli*), whose members are appointed by the subnational legislatures at the first administrative tiers, and by the President. Executive (*hukumat*) and legislative (*majlisi*) branches of government also exist at the oblast, rayon and jamoat levels.

The 1992–1997 civil war exacerbated the severe economic crises caused by the loss of support from the Soviet Union. After gaining independence from the Soviet Union in 1991, Tajikistan almost immediately fell into a civil war among rival political, ethnic and religious factions that ended in 1997 with a peace agreement after having claimed between 30,000 and 60,000 lives and displacing more than a million people. The war also added to the severe devastation of Tajikistan's economy and public services that followed the loss of the financial and human resources that supported the country during Soviet times. As the poorest Soviet Republic, Tajikistan had been heavily depended on these transfers to sustain public services. It is estimated that as of 2018, Tajikistan's per capita GDP remained 16 percent below its 1990 levels, making it the only Central Asian country still not having full recovered from the economic breakdown that followed the dissolution of the Soviet Union.

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Table 2.1: Central Asian Countries by World Bank Income Group Classification, 2008–2019

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tajikistan	L	L	L	L	L	L	LM	LM	LM	L	L	L
Kazakhstan	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
Kyrgyz Republic	L	L	L	L	L	LM	LM	LM	LM	LM	LM	LM
Turkmenistan	LM	LM	LM	UM	UM	UM	UM	UM	UM	UM	UM	UM
Uzbekistan	L	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM

Source: World Bank, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Notes: Income underlying classification measured as GNI per capita in US$ (Atlas method). L = Low-income country, LM = Lower middle-income country, UM = Upper middle-income country. Shaded cells indicate change in country income group.

Figure 2.9: Trends in Real GDP Per Capita and Its Growth Rate in Tajikistan, 2008–2025
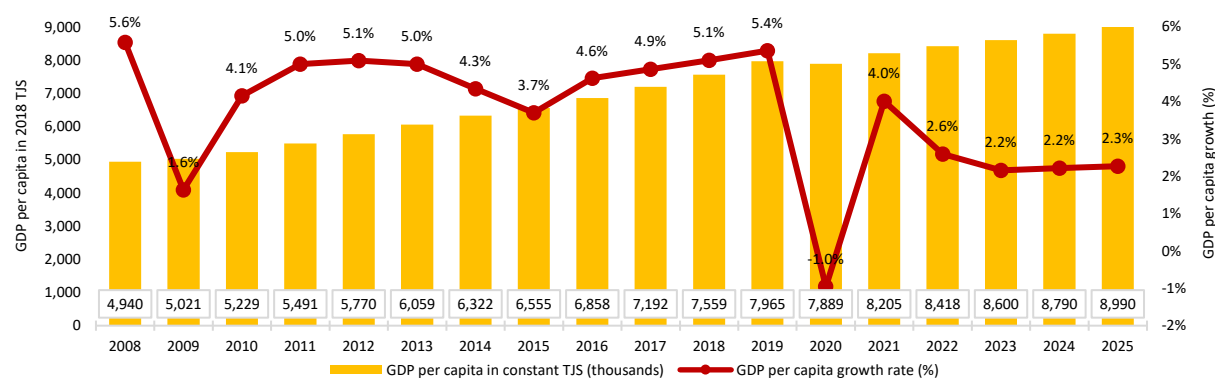
Source: IMF, World Economic Outlook (WEO) (October 2020). Estimates begin in 2014.

Tajikistan is classified as a low-income country, with a national income just below the lower middle-income threshold. Due to the COVID-19 pandemic, GDP per capita is projected to shrink by one percent in 2020, and to rebound to 4 percent growth in 2021. With a per capita GNI of US$1,030 as of 2019, Tajikistan is classified as a low-income country according to World Bank methodology, falling just below the lower-middle-income group threshold of US$1,035. The country was in the lower-middle income category from 2014 to 2016, before the drop in growth inflicted by the economic crisis in Russia relegated it back to low-income status in 2017 (Table 2.1). The Tajik economy's high vulnerability to the Russian business cycle in part results from of its heavy dependence on remittances from Tajik labor migrants. As of 2019, remittances coming primarily from Russia amounted to 29 percent of GDP, the second highest rate in the world (Figure 2.13). The recovery that followed the 2014–2015 slowdown came to an abrupt stop through the global economic disruptions of COVID-19, which the International Monetary Fund (IMF) estimates will cause per capita GDP to contract by one percent in 2020 (Figure 2.9). This is a smaller reduction than those projected for Kazakhstan (3.9 percent) and the Kyrgyz Republic (13.8 percent), but still a substantial burden for the poorest country in the region (Figure 2.10 and Figure 2.11). Meanwhile, inflation, which had already picked up in 2019, is projected to reach 8.1 percent in 2020, its highest level since 2011 (Figure 2.12).

Figure 2.10: Trends in Real GDP Per Capita in US$ in Central Asia, 2008–2018
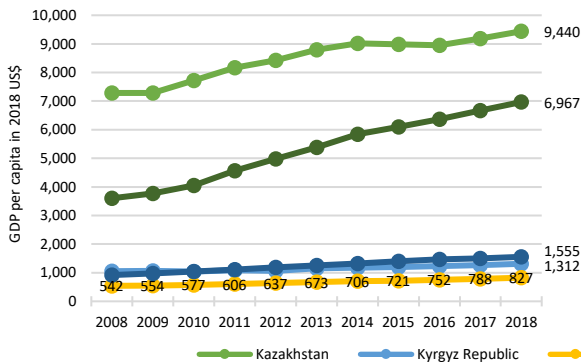
Figure 2.11: Trends in Real GDP Per Capita in International $ in Central Asia, 2008–2018
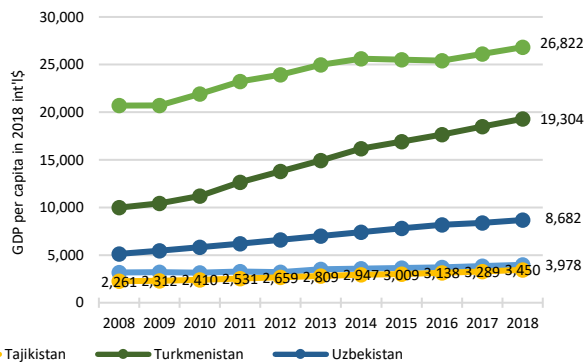
Source: Global Health Expenditure Database.

Figure 2.12: Trends in Inflation in Central Asia, 2010–2020
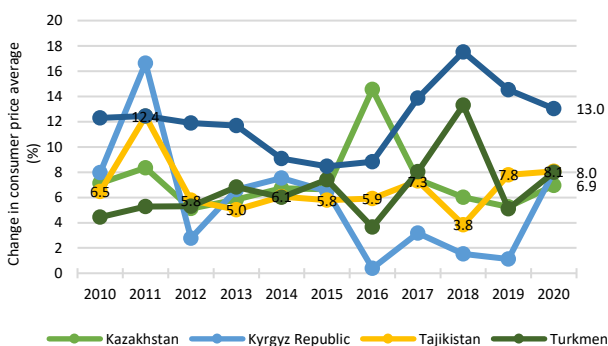
Figure 2.13: Trends in Foreign Remittances Received in Central Asia, 2009–2019
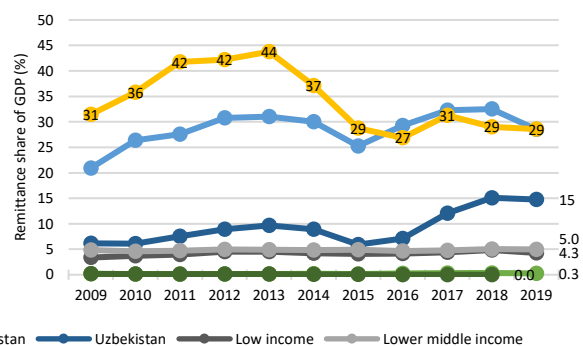
Source: International Monetary Fund, World Economic Outlook (October 2020). Projections from 2019 onward.

Source: World Development Indicators

Tajikistan has the lowest labor force participation rate in the Central Asia region and the informal sector is estimated to account for about 40 percent of the Tajik economy. The pandemic will also likely increase or at least halt previous reductions in unemployment and informality in the country. For 2020, the International Labor Organization (ILO) estimates an unemployment rate of 6.9 percent, far above the official rate of 3 percent. The estimated labor force participation rate is 42 percent, by far the lowest in the Central Asia region.[2] Moreover, survey data indicate that about half of the Tajik labor force is active in the informal sector (World Bank 2020e), which was estimated to account for 38 percent of the country's GDP in 2015, down from 44 percent, 10 years earlier (Medina and Schneider 2018).

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[2] Data obtained from ILOSTAT https://ilostat.ilo.org/data/ on December 18, 2020.

Figure 2.14: Trends in Poverty at the 3.20 International $ Poverty Line in Central Asia, 2003–2018
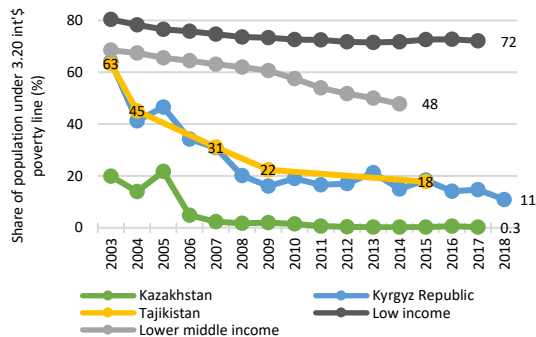
Source: World Bank (2020c).

Figure 2.15: Trend and Regional Differences in Population Shares below National Poverty in Tajikistan, 2013–2022
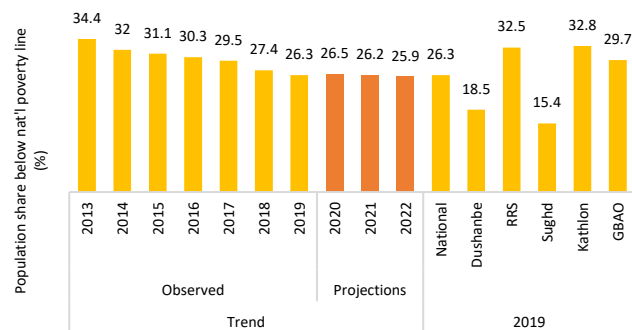
Source: World Bank (2020d).

A quarter of the Tajik population lives under the national poverty line, and despite signs of economic recovery in the second half of 2020, the COVID-19 pandemic is forecasted to halt a two-decade downward trend in poverty. Underemployment and informality, low productivity, and a high dependency ratio contribute to a high prevalence of poverty in Tajikistan. Twenty percent of the population were estimated to be below the 3.20 international $ poverty line in 2015—a drastic decline compared to 2003 when it stood at 63 percent (Figure 2.14).[3] More than a quarter of the population lived below the national poverty line of TJS198 or US$21.63 per person per month in 2018 (Figure 2.15). The drop in the national poverty rate from previous years continued into 2019, but longstanding regional differences remained, with the rate in the richest region, Sughd, about half that of the RRS, Khatlon and GBAO. In fact, in the latter two regions, poverty increased from 2018 to 2019 (World Bank 2020d). Also, while poverty in urban areas of the country fell to 18.4 percent, it stagnated in rural areas at 30.2 percent. These findings reflect persistent economic inequality in the country: while the Gini-coefficient of consumption in Kazakhstan fell by 20 percent from 2003 to its 2015 level of 26.8, that of Tajikistan rose by 4 percent, to 34, over the same period.[4] The rise in inequality was chiefly driven by the massive drop in remittances caused by the economic downturn in Russia, which disproportionately affected poorer households that account for the bulk of outward labor migration. Consequently, the rise in inequality stopped after 2015, when remittances again stabilized. The COVID-19 pandemic is projected to cause an uptick in poverty in 2020. Early results from a World Bank rapid telephone survey in May 2020 indicate as much, with the share of households experiencing food insecurity having doubled from pre-pandemic levels. By August, food insecurity had again reduced, but remained elevated compared to previous years (World Bank 2020a).

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[3] The population share falling under the international poverty line of 1.90 international $ per person per day which defines the most extreme forms of poverty was 4.8 percent in 2015.
[4] The Gini coefficient, data on which we obtained from the World Development Indicators database, measures the extent to which the distribution of a welfare measure—like household per capita consumption—deviates from a perfectly equal distribution. The coefficient is bounded between 0 and 100, with 0 representing perfect equality where all households have the same per capita consumption, and 100 implying maximum inequality where one household consumes everything so that the consumption of all other households is zero.

Figure 2.16: Trends in Government Revenue as a Share of GDP in Central Asia, 2010–2020

Source: International Monetary Fund, World Economic Outlook (October 2020). Projections from 2019 onward.
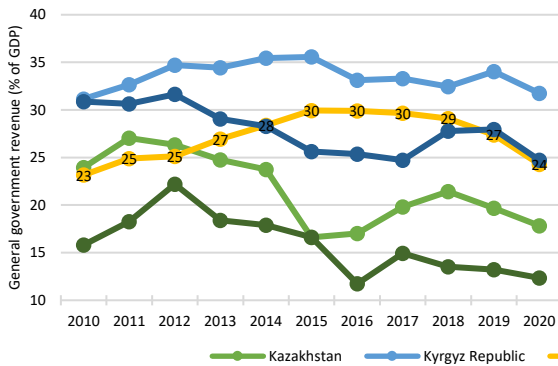
Figure 2.17: Trends in Government Expenditure as a Share of GDP in Central Asia, 2010–2020
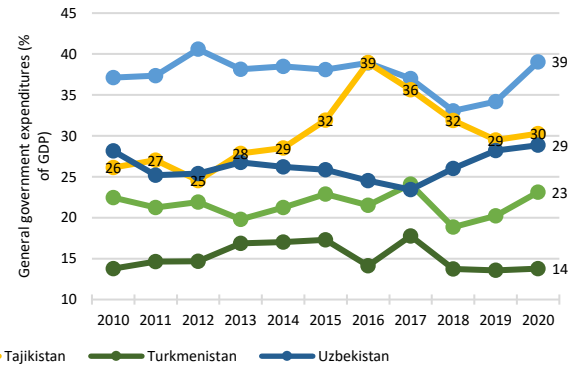
Source: International Monetary Fund, World Economic Outlook (October 2020). Projections from 2019 onward.

Figure 2.18: Trends in Government Gross Debt as a Share of GDP in Central Asia, 2010–2020
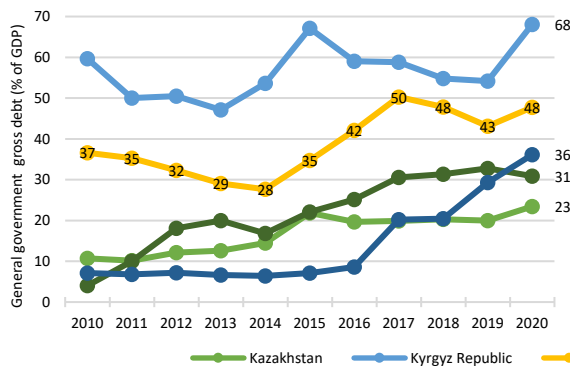
Figure 2.19: Trends in Net Lending/Borrowing in Central Asia, 2010–2020
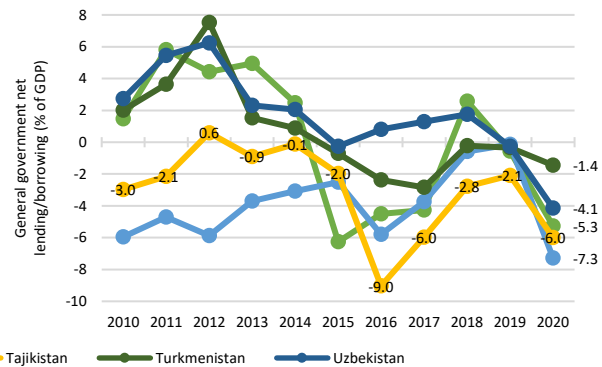
Source: International Monetary Fund, World Economic Outlook (October 2020). Projections from 2019 onward.

Government revenue is high in terms of its GDP share but low in absolute terms, and public debt will increase in the wake of the COVID-19 pandemic. In 2017, the latest year for which internationally comparable, non-modelled data on public revenues for Tajikistan are available, they amounted to US$238 per capita—far less than in the other Central Asian countries. Because of Tajikistan's low GDP, they, however, amounted to a public-revenue-to-GDP-share of 30 percent, a high rate compared to other low- and lower-middle-income countries. Projections from 2018 onwards, however, see the public revenue share in GDP falling, with a particularly steep drop in 2020 (Figure 2.16). Meanwhile, the heightened short-term spending needs are forecasted to increase public expenditures in 2020, to then 30 percent of GDP—the second-highest rate in the Central Asia region (Figure 2.17). As a result, the public debt share in GDP, which was just beginning to recover from massive earlier increases from the Russian financial crisis and the financing of the hydroelectric power plant in Rogun, is expected to rise to 48 percent, with net borrowing in 2020 amounting to 6 percent of GDP (Figure 2.18 and Figure 2.19).

PART 3 – HEALTH SYSTEM ORGANIZATION

INSTITUTIONS AND HEALTH CARE PROVIDERS

At the national level, the Ministry of Health and Social Protection (MoHSP) formulates health policy, plans capital investments, and regulates and is accountable for medical equipment, supplies and service provision and quality in both the public and private sectors.[5] Together with the Ministry of Education and Science, it manages institutions of medical education and research, and operates a number of specialized tertiary hospitals in Dushanbe and nationwide *vertical* networks of facilities for prevention and infectious disease control, such as the Republican Centers for Immunoprophylaxis and the Republican Tuberculosis Control Centers (Figure 3.1). Other republican line ministries such as Internal Affairs, Defence, Security, Taxation, and Transport operate their own health facilities, which exclusively serve their employees and dependents.[6]

Most health care in Tajikistan is delivered under the auspices of subnational governments. The health departments of oblasts (referred to as "regions" in Figure 3.1) operate large hospitals and specialized outpatient facilities. They also assume a supervisory role for health care provision in their subordinate cities and rayons.[7] At the rayon and city levels, there are separate administrative structures for hospitals and outpatient facilities: central rayon and central city hospitals and the smaller hospitals under their auspices are managed by central rayon and city hospital chief physicians, whereas primary care managers are responsible for

Figure 3.1: Organizational Chart of Tajikistan's Public Health Care System
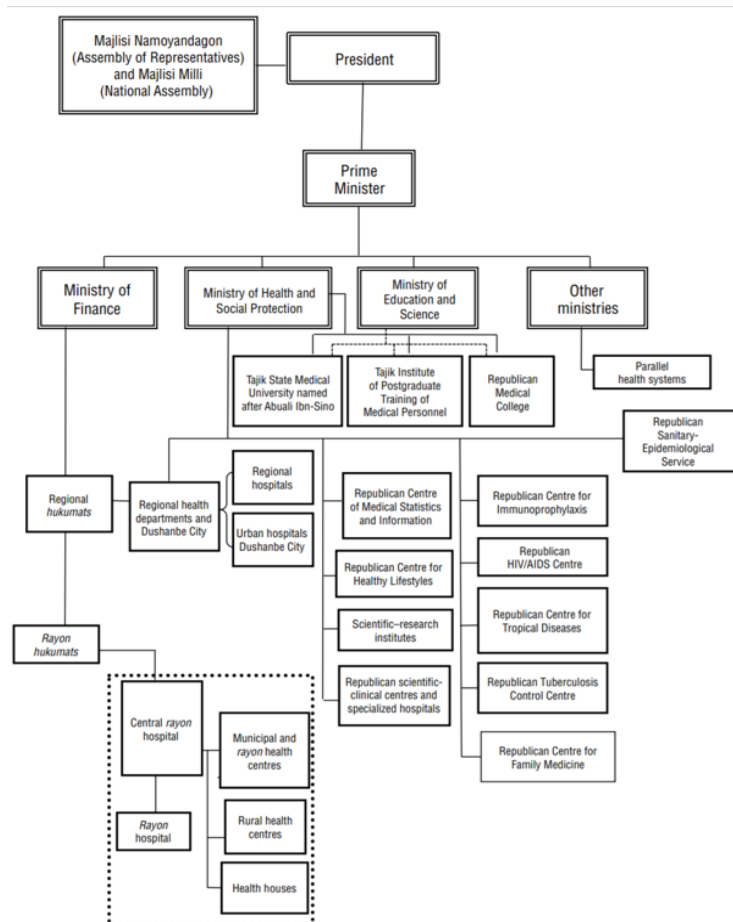
Source: Khodjamurodov et al. (2016).

the operation of city and rayon health centers,[8] and the subordinate networks of rural health

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[5] Where not otherwise indicated, this section sources from Khodjamurodov et al. (2016).
[6] Parallel health care systems are also run by certain state-owned enterprises like Tajik Railway.
[7] Health care providers in Dushanbe city and the RRS where there are no oblast-level administrative structures are directly accountable to MoHSP.
[8] Rayon and city health centers are also referred to as *polyclinics* and may be physically colocated with rayon and city central hospitals.

centers and health houses. Depending on their place of residence, all citizens are assigned to either a health house, rural health center, rayon health center, or city health center as their primary care provider and gatekeeper to higher levels of care. In 2019, city health centers on average had about 46,200 and rayon health centers about 13,200 people in their catchment areas, while rural health centers and health houses on average served about 4,400 and 1,700 people, respectively (Table 3.1).

Table 3.1: Number and Average Characteristics of Public Outpatient Care Facilities in Tajikistan, 2019

	Number of facilities	Average population served	Average number of staff by cadre								
			Family physicians[9]	Specialists	Laboratory staff	Family nurses	Other nurses	Junior medical staff	**Total medical staff**	Administrative staff	**Total staff**
City health center	40	46,202	24.9	30.7	9.9	50.8	61.6	27.5	**205.3**	22.0	**227.3**
Rayon health center	53	13,174	8.8	19.2	2.7	18.9	29.5	12.4	**91.6**	15.9	**107.6**
Rural health center	839	4,414	1.6	0.9	0.0	4.6	3.6	1.8	**12.5**	1.3	**13.8**
Health house	1,739	1,693	0.0	0.0	0.0	1.3	0.9	1.0	**3.2**	0.8	**4.0**

Source: Own calculations based on data provided by Ministry of Health and Social Protection.

Figure 3.2: Shares of Private Sector Physicians and Hospital Beds in Tajikistan and Its regions, 2019
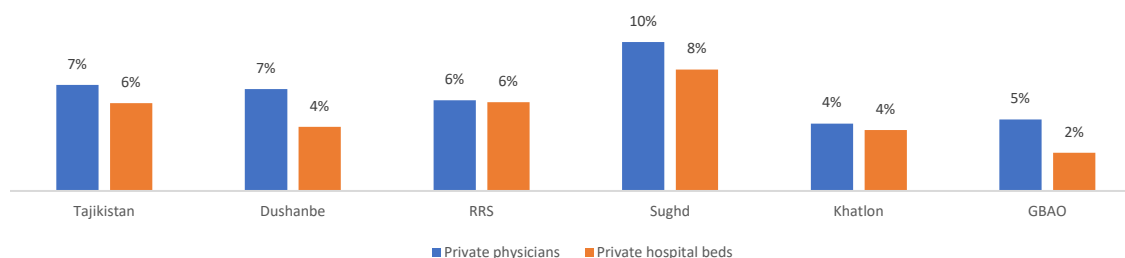
Source: Ministry of Health and Social Protection.

Private sector providers continue to play a limited role, focusing on high-cost specialized services in urban areas. Almost two decades after the Tajik health care sector was opened to private providers,[10] their number and the volume of care they render remains small. In 2019, there were 479 private health care facilities in the country, 403 of which were outpatient facilities, and the private sector employed about 7.3 percent of the country's doctors[11] and operated 6 percent of hospital beds (Figure 3.2). In 2014, 1.6 percent of outpatient consultations were carried out in private practices and less than one percent of births over 20122017 took place in private facilities.[12] The private sector plays a more important role in niches with clearer profit margins, namely high technology diagnostic services, specialized ambulatory and surgical care, and dental care. Consequently, private facilities are most often located in urban areas where the population has sufficient capacity to pay, particular in Sughd, the richest oblast, where 10 percent of physicians and 8 percent of hospital beds are now in the private sector (Figure 3.2). With the notable exception of the Agha Khan foundation, which runs a network of health facilities in GBAO, non-profit private providers play a limited role for health care delivery in Tajikistan, and mainly

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[9] Family physicians are typically specialists who have undergone six-month retraining courses in family medicines.
[10] The *Law on Private Medical Practice* was adopted in 2002.
[11] In 2014, 80 private practices (14 percent of private providers) were located inside public health care facilities under private-public partnerships.
[12] Data from 2017 Tajikistan Demographic and Health Survey (DHS).

focus on community health issues and prevention. While few reliable data exist, medical tourism to richer countries reportedly increasingly common among the more affluent parts of the Tajik population.

<div align="center">PUBLIC HEALTH CARE COVERAGE</div>

The collapse that followed the dissolution of the Soviet Union left the Tajik health system unable to fulfill citizens' constitutional right to free care. After independence, Tajikistan continued to grant citizens the constitutional right to free health care, but with the dramatic collapse of public funding and the health workforce in the 1990s, the entitlement was rendered hollow (Jacobs 2019). Instead, informal payments became rampant and rates of exposure to high out-of-pocket health care expenditures (OOPEs) rose to the highest levels in the Central Asia region (Diagne, Ringold, and Zaidi 2012, Schwarz et al. 2013).

Today, public health coverage is provided through two tax-financed benefit packages that stipulate subsidized user fees from which several population groups are exempt based on their age, social status or health. Tajikistan has no social health insurance or a relevant private health insurance market. Instead, general taxes finance two benefit packages which entitle citizens to partly or fully subsidized public health care. As of 2019, and with technical support from development partners, the "Basic Benefit Package"[13] (BBP) was active in 19 rayons, home to about 20 percent of the population. The package entitles all rayon residents to free emergency care, free basic preventative and primary care, free basic diagnostic testing, and—upon referral—free specialist consultations. Moreover, free delivery care is provided for women with four or more antenatal care visits. Outpatient procedures, planned hospital care, and advanced diagnostic tests are billed at 50 percent of a user fee schedule if patients present a referral from their primary care provider, and at 70 percent if not.[14] To enable improvements in financial protection, the fees were set substantially lower than the estimated informal payments charged previously (Rechel and Khodjamurodov 2010). A number of population groups are exempt from user fees altogether based on their social or health status—including the poor, infants, and adults over 80.[15] These fee-exempt populations are also entitled to free medicines from Tajikistan's essential drug list. There is no outpatient drug coverage for the rest of the population, for whom only essential medicines administered during hospitalization are formally subsidized. The second benefit package—named after Government Decree No. 600 of December 2008[16]—is implemented in all parts of the country not operating under the BBP. Coverage is very similar to the BBP, except that the subsidies patients gain by being referred by a primary care provider are somewhat less generous—patients with a referral are charged 80 percent of the use fee schedule price, whereas patients without referral pay 100 percent (O'Dougherty, Zues, and Akkazieva 2014). The fee-

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[13] Also referred to as the "State Guaranteed Package of Health Services" or the "Guaranteed Benefit Package."

[14] Patients residing outside the BBP rayons who seek care there pay 100 percent of the list prices.

[15] The fee exempt groups are veterans and heroes, victims of the Chernobyl disaster, the disabled, orphans, infants, adults over 80, nursing home residents, and the poor, as certified by the rayon or city commission or social protection department. Also exempt are children under five with respiratory or diarrheal disease, and patients of all ages with hemophilia, hydrophobia, diphtheria, tuberculosis, HIV/AIDS, leprosy, and diabetes. Treatment for childhood diarrhea and acute respiratory infections is covered under UNICEF's Integrated Management of Childhood Disease Program (IMCI) program. The Global Fund to Fight AIDS, Tuberculosis and Malaria funds and facilitates treatment for HIV/AIDS and tuberculosis.

[16] Government Decree No. 600: "About the procedure of health services provision in public health facilities to the citizens of Tajikistan," December 2, 2008.

exempt groups under Decree 600 include those of the BBP, plus patients with acute myocardial infarction and terminal cancer (World Health Organization 2016b).

<center>**PUBLIC HEALTH CARE BUDGETING AND PROVIDER PAYMENTS**</center>

Tajikistan's public health care system is financed by general taxes, formal and informal payments from patients, and external aid. All revenue for Tajikistan's public health care system comes from three sources: government transfers from general taxes, formal and informal direct payments from patients, and foreign financial aid. The general taxes and other public levies used for government health spending are set and collected at all tiers of government. Taxes that are set at republican level include value-added tax, income and profit tax, excise duties, taxes on the extraction of natural resources, and road tax. Taxes that are set by subnational governments include vehicle and real estate taxes. The revenue of the taxes set by subnational governments is fully retained at the subnational level, but is small compared to that of republican taxes, amounting to about 8 percent of total tax revenue as of 2019. The annual budget law determines what share of the republican tax revenue a subnational government collects. It can keep and what is to be passed up to the center for republican spending or regional redistribution.

The public budgeting process follows a Medium-Term Expenditure Framework and consists of negotiations between the Ministry of Finance (MoF) and a large number of national and subnational budget administrators. The public budgeting process begins in January with MoHSP and other line ministries proposing new spending priorities to the President who, upon review, includes them in his annual address to parliament. The address outlines new policy initiatives and the main directions of fiscal policy for the coming years.[17] On this basis, MoF every March issues detailed budget instructions for a three-year "Medium-Term Expenditure Framework" to each "main administrator." The budget instructions specify target levels of debt and revenue, estimate expenditures on new policies and investments, set salaries for public employees, and establish sectoral spending ceilings. The main administrators are MoF's negotiating partners in determining the structure of the country's overall ("state") budget that is composed of a republican share which funds national level programs and institution, as well as a subnational share which is executed by oblast, city and rayon administrations. For health, the republican-level main administrators comprise MoHSP and other line ministries with health care functions like the Ministries of Internal Affairs, Defence, Security, Taxation, and Transport.. At the subnational level, to which typically over 80 percent of the public health care budget is allocated, the main administrators are the governments of GBAO, Sughd and Khatlon oblasts, and the cities and rayons of republican subordination (RRS), including Dushanbe.

Based on the MoF budget instructions, each main administrator forms an input-based, line-itemized budget request using a bottom-up approach. Subnational funding gaps are filled through cross-subsidization at the next higher administrative level. Based on the MoF budget instructions, all main administrators compile input-based, line-itemized budget requests for the health facilities and programs under their auspices. MoHSP's budget includes expenses for the nationwide *vertical* networks of facilities for prevention and infectious disease control like the Republican Centers for Immunoprophylaxis and the Republican Tuberculosis Control

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[17] For 2020–2022, the health sector priorities include renewed focus on HIV and vaccine-preventable illnesses, calls for a better material and technical base of health care providers, and institutional and administrative reform.

<center>12</center>

Centers, capital investments,[18] and republican hospitals and institutions of medical education. The budgets for oblast level hospitals and specialized outpatient care centers are drafted by oblast health departments, and those of rayon and city level outpatient facilities and hospitals by primary care managers and central rayon and central city hospital chief physicians.[19] Rural health centers and health houses do not have their own budgets but are assigned in-kind endowments by the rayon health center they operate under. Once drafted, the rayon and city level budget requests are submitted to the rayon and city finance authorities, which collate them with the budget requests of other sectors and make adjustments based on subnational economic projections. If these collated budgets exceed expected revenues from subnational and retainable republican taxes and levies, the finance authorities indicate that supplementary funds from higher administrative tiers are required.[20] The draft rayon and city budgets are then reviewed and confirmed by the rayon's or city's legislative bodies (*Majlisi*), and subsequently submitted to the next higher administrative level at the end of July. Republican line ministries, rayons and cities of republican subordination, and Dushanbe submit their draft budgets directly to MoF, while rayons and cities in Khatlon, Sughd, and GBAO submit them to the oblast level finance authorities. The oblast finance authorities, in turn, consolidate the budgets of their subordinate cities and rayons and fill any requests for supplementary funding by cross-subsidizing between poorer and richer rayons and cities. If the sum of revenues within an oblast is insufficient to meet all supplementary funding requests—as is currently the case for GBAO and Khatlon—the consolidated oblast budget which is submitted to MoF indicates that republican budget support is needed.[21]

MoF revises the budget requests in negotiations with the main administrators and submits a consolidated state budget to the government's budget commission. The budget, upon clearance by Parliament, takes effect in January. MoF reviews the main administrators' budget requests regarding compliance with its original budget instructions and midyear macroeconomic forecasting. Negotiations with the main administrators which typically result in downward revisions of the budget requests take place in August. Once negotiations have concluded, MoF, in September, presents a fully consolidated budget for all sectors in a draft "Law on State Budget for the Next Fiscal Year" to the government's permanent budget commission. After review, the draft law is submitted to the lower chamber of parliament (*Majlisi Namoyandagon Majlisi Oli*) for deliberation, during which the main administrators can express their views. The law acquires legal force before the end of the year upon adoption by parliament. Both up- and downward budget adjustments are possible over the course of the fiscal year if public revenues diverge from the original projections. For example, in 2018, the end-year adjusted budget was seven percent higher than the one planned at the beginning of the year. If adjustments are upward, the increases are not subject to regional redistribution, that is, the excess subnational revenues are fully at the disposal of subnational governments, and it depends on the influence subnational health

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[18] Investments in health care infrastructure and equipment are based on annual plans MoHSP derives under consideration of norms, new policy priorities, and applications from health care providers. MoHSP sends its investment requests to the Ministry of Economic Development and Trade, which carries them out contingent on funding approval from MoF.

[19] Central rayon hospital budgets include funding for their subordinate rural hospitals.

[20] Higher level budget support comes in the form of (i) ring-fenced "subventions" to cover payments for protected line-items like salaries, and (ii) more fungible "subsidies"—however these are rarely granted.

[21] Khatlon and GBAO are hence referred to as "subvention oblasts." Sughd oblast is currently able to cover funding gaps in subordinate rayons on its own and is referred to as a "donor oblast" as part of its public revenue is used to fill funding gaps in other parts of the country. As of 2019, ten of the seventeen subnational main administrators received republican subventions.

authorities hold with finance departments as to how much additional funding is secured for the health sector.

Figure 3.3: Financing Flows in the Tajik Health Care System
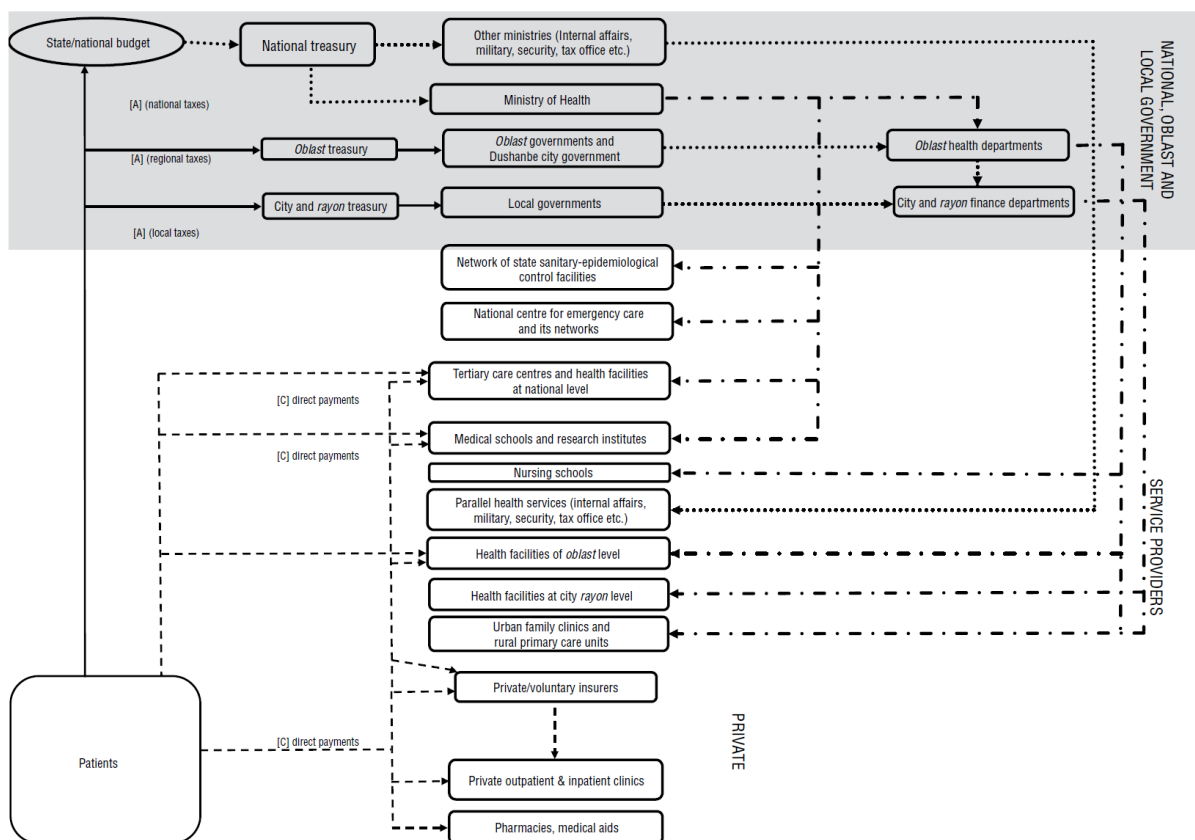
Source: Khodjamurodov et al. (2016).

In line with the centralized, input-based budgeting mechanism, health facilities receive their public funding prospectively and have little discretion to move funds between line items. Public health facilities receive their budgets prospectively, and budget amounts are based on the input-norms stipulated for the respective facility type. For instance, a general hospital would receive one physician salary per 25 curative care beds. Primary care facilities also receive budgets according to input-norms, but if the normed budget lies below a certain minimum threshold per person in the facility's catchment area, additional funding is assigned through the 'per capita financing' policy, which is discussed in more detail in Part 7. Budgets for salaries as the most important line-item are protected, so that unspent salary funds cannot be reassigned to other spending items such as utilities or medicines. If a normed staff position remains vacant, facilities can use the corresponding budget to increase the workload and pay of existing staff to up to 1.5 full-time equivalents for physicians and 1.25 full-time equivalents for nurses. Any remaining salary funds have to be sent back to the financial authorities.

Facility incomes from midyear budget adjustments and formal patient copayments are largely fungible but make up a small share of overall facility funding. The funds facilities receive from any upward budget adjustments over the course of the fiscal year and those collected through formal user fees under BBP and Decree 600 are more fungible than the input-based line-

item funding from government transfers. User fee income under BBP and Decree 600 are subject to a 5 percent budget tax, and under Decree 600 an additional 5 percent levy is paid to MoHSP. Under both schemes, up to 40 percent of fee income can be used for salary bonuses, or for medical consumables and equipment.[22] Recent data for providers under BBP suggests that 60 percent of copayment income is used for drug purchases and about 17 percent for salary bonuses in hospitals, with the corresponding shares standing at 23 percent and 32 percent, respectively, for primary care facilities (MoHSP 2019). Facility income from budget adjustment and formal patient copayments, however, typically remains small compared to the rigidly regulated, input-based government transfers. The financial flows in the Tajik health care system—public as well as private—are summarized in Figure 3.3.

In sum, MoHSP as the primary policymaker is marginalized in the health budgeting process, and despite a high degree of formal administrative and financial decentralization in the Tajik health care system, the actual decision-making power of subnational health and financial authorities over the health budget is very limited. Beyond its limited influence on the initial budget instructions, MoHSP as the primary setter of health policy and the stakeholder accountable for its implementation is marginalized in the budgeting process, with meaningful control only over the small republican share of the state health budget, which typically amounts to less than 20 percent of public health expenditures. Discretion over health care budget levels and spending is also tightly constrained at the subnational level. While the budgetary process includes a myriad of negotiations between subnational budget recipients and their finance departments and between main budget administrators and MoF, in practice, centrally-set staff salaries and input norms that vary by size and type of facility "mechanically" determine most of the funding amount, and what it can be used for. Budget requests rarely exceed these norm-based amounts, as main administrators and their subordinate entities know that under the system's tight budget constraints, additional funding requests stand little chance of being granted.[23] Equally, there is no incentive for budgeteers to request less than what current inputs allow, even if inputs are in oversupply. As such, the public budget allocations for health in Tajikistan closely follow and perpetuate the historic regional distribution of facilities, rather than responding to health care demand or need.

Initiatives to change from input-based to strategic purchasing have been in the planning or pilot stage for several years. An interministerial expert group has been established at MoF with support from WHO, and the European Union to technically support the piloting and scale-up of several interventions to transition Tajikistan to strategic purchasing. A pilot that is currently being initiated in the Sughd region intends to establish a single payer system that pools health funding across five rayons and reimburses inpatient care on a case-basis, and primary care by a capitation formula. Case-base financing of inpatient care is also being piloted in three rayons of the RRS and in Khatlon oblast, supported by the Asian Development Bank. Performance-based financing (PBF) of primary care providers has been piloted in Sughd and Khatlon oblasts supported by the World Bank, the results of which are discussed in Part 7. Introduction of a single-payer mandatory health insurance which has been planned for over a decade has recently been postponed to 2022 (Government of the Republic of Tajikistan 2019).

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[22] Only under Decree 600 can user fee revenue be used for utility payments or structural renovation of facilities.

[23] Acknowledging the limited managerial autonomy of the subnational tiers of government, a public servant from a rayonal finance department interviewed for this report referred to the rayonal finance authorities as the "masters of the protected budget lines."

PART 4 – HEALTH OUTCOMES

Tajikistan has seen rapid improvements in maternal and child health (MCH) since independence but continues to lag other countries in the region. After a rise in the years immediately following independence, neonatal, infant, under-five, and maternal[24] mortality rates have all steadily declined since the mid-1990s, and now are substantially reduced from pre-independence levels (Table 4.1). The mortality reductions among mothers and children are the main cause of a steep increase in life expectancy—from 59 years in 1990 to 71 as of 2017—that is in step with overall trends in low- and lower-middle-income countries.[25] Improvements have also been made in under-five stunting, a key indicator of childhood malnutrition and children's overall development (Grantham-McGregor et al. 2007) (Figure 4.1), as well as for more short-term measures of nutritional status like underweight (Figure 4.2). Despite this rapid progress, Tajikistan's MCH outcomes still lag those of other countries in the region, with the notable exception of upper middle-income Turkmenistan. For instance, infant and under five mortality rates are almost twice as high and the rate of stunting almost 50 percent higher in Tajikistan than in the Kyrgyz Republic, the most similar Central Asian country in terms of economic development. Tajikistan's life expectancy, and mortality and stunting indicators, however, compare favorably to low- and lower-middle-income country averages.

Table 4.1: Trends in Life Expectancy and Childhood and Maternal Mortality in Central Asia since 1990

| | GDP per capita, PPP (constant 2017 international $) | | Life expectancy at birth in years | | Mortality rate per 1,000 births | | | | | | | |
| | | | | | Neonatal | | Infant | | Under-five | | Maternal | |
	2018	% change from 1990	2017	% change from 1990	2018	% change from 1990	2018	% change from 1990	2018	% change from 1990	2017	% change from 2000
Tajikistan	3,235	-16	71	20	15	-50	30	-62	35	-66	0.17	-68
Kazakhstan	25,544	90	73	7	5	-79	9	-79	10	-80	0.10	-84
Kyrgyz Republic	5,133	0	71	5	13	-47	17	-68	19	-70	0.60	-24
Turkmenistan	14,845	106	68	8	24	-12	37	-44	42	-47	0.07	-76
Uzbekistan	6,755	98	72	8	11	-66	17	-72	18	-75	0.29	-29
Low-income	2,421	48	63	25	27	-44	49	-55	70	-62	4.55	-46
Lower-middle income	6,368	122	68	16	24	-51	38	-56	51	-59	2.65	-40

Source: Author calculations based on data from World Development Indicators.

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[24] Maternal mortality estimates are only available from 2000.
[25] At 4.5 years, the female-male gap in life expectancy is smaller in Tajikistan than in other Central Asian countries.

Figure 4.1: Trends in Stunting of Children under Five in Central Asian Countries, 2005–2018
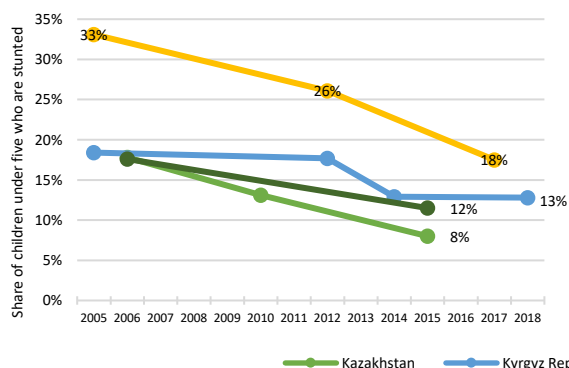
Figure 4.2: Trends in Underweight of Children under Five in Central Asisan Countries, 2005–2018

Kazakhstan — Kyrgyz Republic — Tajikistan — Turkmenistan
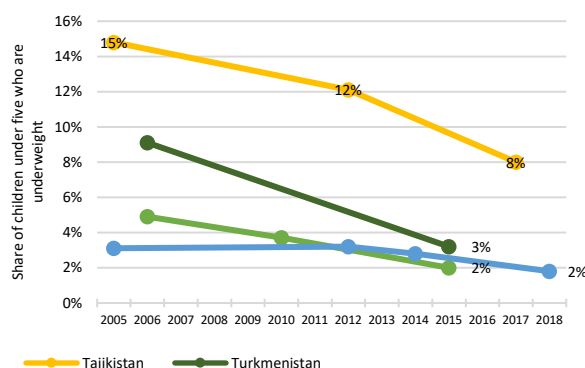
Source: Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS)
Notes: Stunting (underweight) defined as a height-for-age (weight-for-age) z-score below two standard deviations of the World Health Organization 2006 growth standard.

Noncommunicable diseases (NCDs) are steeply on the rise, spurring the country's epidemiological transition. Tajikistan finds itself in the middle of an epidemiological transition where it faces the twin challenges of a still large burden from infectious diseases and MCH conditions and a simultaneous rise in the prevalence of noncommunicable, often chronic conditions typical for richer and aging societies. Modeling by the Institute of Health Metrics and Evaluation (IHME) (Vos et al. 2020) suggests that as of 2019, the main causes of death and disability were cardiovascular conditions (Figure 4.3). Overall, seven of the ten leading causes of death and disability are NCDs, and the disease burden of six of the seven increased by over 30 percent over the last decade. The increased burden of NCDs with their complex and often costly care requirements[26] is also borne out by recent biomarker data from WHO's Stepwise Approach to Surveillance (STEPS) surveys (World health Organization 2017). More than a third of the Tajik population age 18–64 is hypertensive, ten percent suffer from high cholesterol and 11 percent are prediabetic or diabetic (Figure 4.4). Moreover, 14 percent of adult Tajiks were obese as of 2016, a more than 60 percent increase from an estimated 8.6 percent in 2008 (World Health Organization 2013). In total, one-fifth of the population age 40–64 was considered at-risk for cardiovascular disease by a combination of their health behaviors—smoking, diet, and physical activity—and blood pressure levels. Consumption of tobacco products and, for cultural reasons, alcohol is low by international comparison and heavily concentrated among men,[27] but the role of these health behaviors as a risk factor for disease and deaths is rising (Figure 4.5).

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[26] Treatments for cardiovascular disease alone would be responsible for 30 percent of the cost of an essential Universal Health Coverage benefit package covering 80 percent of low- and lower-middle-income country populations (Watkins et al. 2020).

[27] Smoking prevalence in the 2016 Tajikistan STEPS survey was 4.8 percent (9 percent among men, 0.1 percent among women). Smokeless forms of tobacco consumption are, however, more common, with an estimated 19.7 percent of men consuming such products. Estimated mean alcohol consumption per individual aged 15 and older was 3 liters as of 2016 (5.7 among males and 0.8 among females)—similar to Uzbekistan and about half that in Kazakhstan, the Kyrgyz Republic, and Turkmenistan according to estimates from WHO's Global Health Observatory Data Repository (http://apps.who.int/ghodata/). Unhealthy lifestyles are the main cause of the female-male discrepancy in life expectancy and mortality (Akkazieva et al. 2014).

Figure 4.3: Top 10 Causes of Death and Disability (DALYs) in 2019 and Percent Change 2009–2019, All Ages Combined

Legend:
- Communicable, maternal, neonatal, and nutritional diseases
- Non-communicable diseases
- Injuries

Ischemic heart disease	1	
	2	Neonatal disorders
	3	Lower respiratory infect
Congenital defects	4	
Stroke	5	
	6	Diarrheal diseases
Cirrhosis	7	
Diabetes	8	
Low back pain	9	
Headache disorders	10	
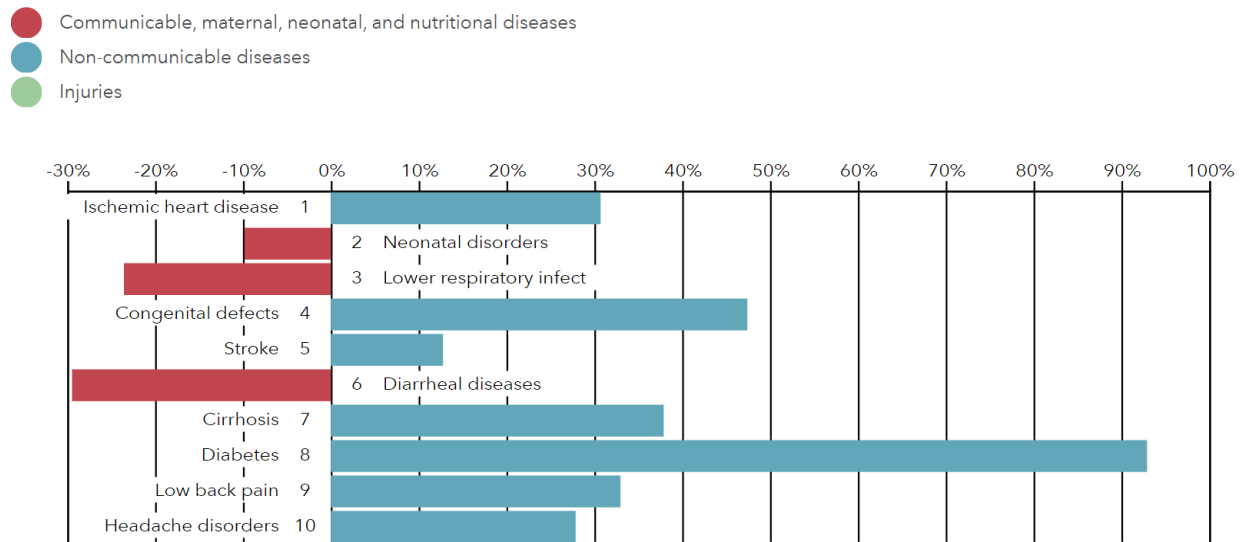
Source: Institute for Health Metrics and Evaluation (2020).

Figure 4.4: Prevalence of NCDs and Their Risk Factors from WHO STEPS Surveys of Adults in Tajikistan (2016), Turkmenistan (2018), and Uzbekistan (2014)

	TJK	TKM	UZB
Hypertensive	34%	26%	31%
High cholesterol	10%	21%	46%
Impaired fasting glucose or diabetic	11%	6%	9%
Obese	14%	15%	20%
At risk of cardiovascular disease	21%	8%	23%
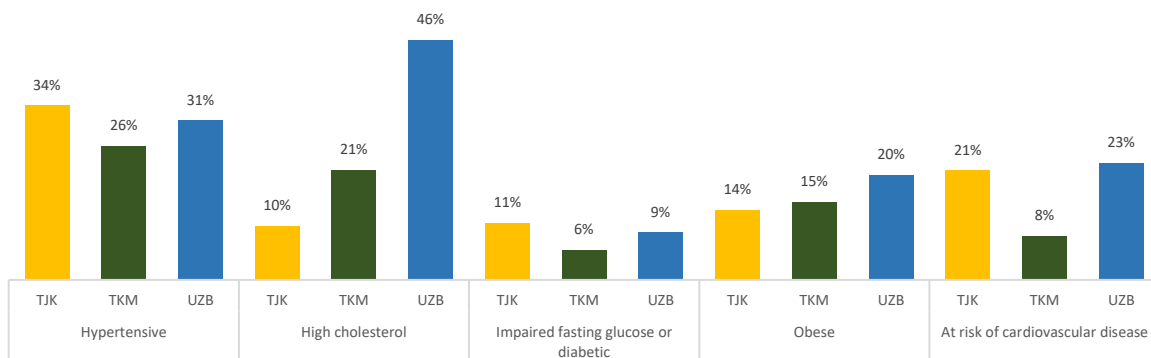
Sources: Author calculations based on micro-data from 2016 Tajikistan STEPS survey and survey reports from 2018 Turkmenistan and 2014 Uzbekistan STEPS surveys, https://www.who.int/ncds/surveillance/steps/reports/en/.
Notes: TJK = Tajikistan, TKM = Turkmenistan, UZB = Uzbekistan. Hypertension defined as high blood pressure (systolic blood pressure > 140 and/or diastolic blood pressure > 90) or on medication for high blood pressure. High cholesterol defined as high cholesterol or on medication for high cholesterol. Impaired fasting glucose defined as (capillary whole blood value ≥ 6.1 mmol/L) or currently on medication for raised blood glucose (for Turkmenistan, threshold is 7.0 mmol/L). Obesity defined as BMI > 30. "At risk" defined as having three or more of the following risk factors for cardiovascular disease: (1) current daily smoker; (2) < 5 servings of fruits & vegetables per day; (3) Low level of activity (< 600 MET minutes per week); (4) overweight or obese; (5) high blood pressure or treated for high blood pressure. Hypertension, cholesterol, fasting glucose, and obesity measurements for population aged 18–64, "at risk" determination for population aged 40–64.

Figure 4.5: Top 10 Risks Contributing to Total Number of DALYs in 2019 and Percent Change 2009–2019, All Ages Combined

Metabolic risks
Environmental/occupational risks
Behavioral risks

2009 ranking		2019 ranking	% change, 2009-2019
Malnutrition	1 — 1	Malnutrition	-22.9%
Air pollution	2 — 2	High blood pressure	28.8%
High blood pressure	3 — 3	Dietary risks	29.9%
Dietary risks	4 — 4	Air pollution	0.5%
Tobacco	5 — 5	High fasting plasma glucose	84.5%
WaSH	6 — 6	Tobacco	12.5%
High fasting plasma glucose	7 — 7	High body-mass index	94.0%
High LDL	8 — 8	High LDL	37.7%
Non-optimal temperature	9 — 9	Alcohol use	35.5%
High body-mass index	10 — 10	WaSH	-32.6%
Alcohol use	11 — 11	Non-optimal temperature	-4.5%

Source: Institute for Health Metrics and Evaluation (2020).

Infectious diseases and MCH conditions remain important causes of death and disability. Despite the rising NCD burden, neonatal disorders and two communicable diseases still represent the second, third, and sixth most important source of death and disability in Tajikistan (Figure 4.3). These two communicable disease—lower respiratory infections and diarrhea—are amenable to and avertable with highly cost-effective interventions (Bhutta et al. 2013). Like neighboring Kazakhstan and Kyrgyz Republic, and despite a drop in new infections over the last years, Tajikistan continues to have one of the highest rates of multidrug resistant tuberculosis in the world, with an incidence of 26 cases per 100,000 population (World health Organization 2020). Treatment completion is reportedly often hindered by labor migration and stigma (Wohlleben et al. 2017).[28]

Figure 4.6: Trends in Socioeconomic and Regional Inequality in Under-Five Mortality in Tajikistan, 2012–2017
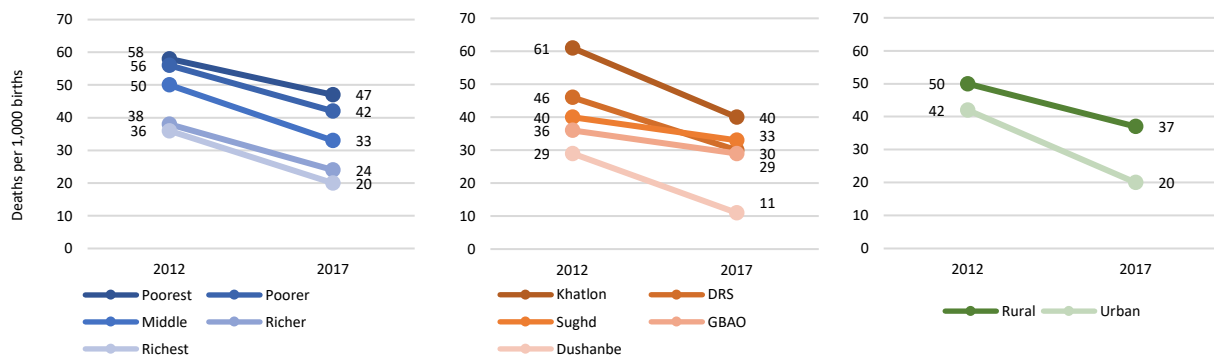
Source: DHS 2012 and 2017.

The overall improvements in child health are occurring at a slower pace for the poor and those living in rural areas, exacerbating inequities. Figure 4.6 shows trends in under-five mortality by wealth quintile, region, and urban and rural residence. The decline in mortality across all groups masks an increase in inequality, as the mortality spread between the poorest and

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[28] Tuberculosis often coincides with HIV, whose incidence increased rapidly between 2000 and 2010 in particular. The number of new HIV infections, like those with Tuberculosis, has diminished since (UNAIDS 2020).

richest quintile grew from +22 to +27 percentage points.[29] While mortality rates across Khatlon, the RRS, Sughd, and GBAO converged, the sharpest drop of over 60 percent, occurred in Dushanbe which had the lowest rate from the outset. Correspondingly, under-five mortality dropped by more than half in urban areas and by only 26 percent among rural residents, widening the rural-urban mortality gap to 17 percentage points. Inequity also persist in measures of early childhood development. The share of children age 6–59 months with anemia is about 50 percent higher in the poorest, poor, and middle wealth quintile than in the richest quintile, and varies drastically between regions (Figure 4.7).[30] Wealth inequalities in stunting remained stable between 2012 and 2017,[31] but children in the richest, richer and middle quintiles are still 40 percent less likely to be stunted than children in the poorest quintile (Figure 4.8). Rural-urban stunting inequity, however, appears to have been eradicated despite uneven regional trends, as stunting rates in Dushanbe remained stable but dropped steeply in all other regions except GBAO.

Figure 4.7: Share of Children Age 6–59 Months Who Are Anemic in Tajikistan, 2017
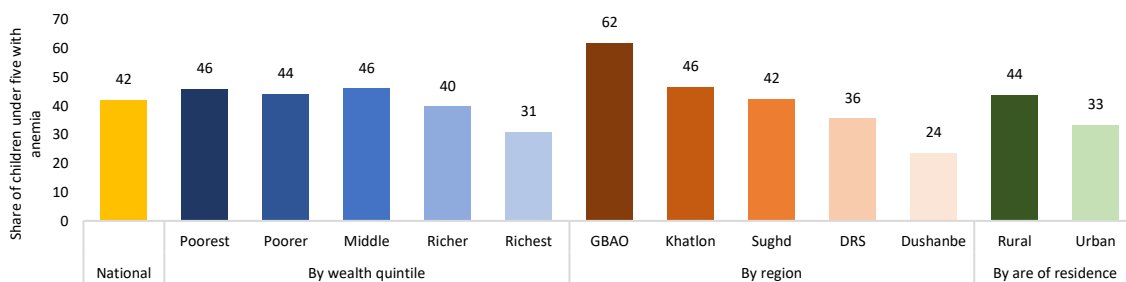
Source: DHS 2017.

Figure 4.8: Trends in Socioeconomic and Regional Inequality in Stunting of Children under Five in Tajikistan, 2012–2017
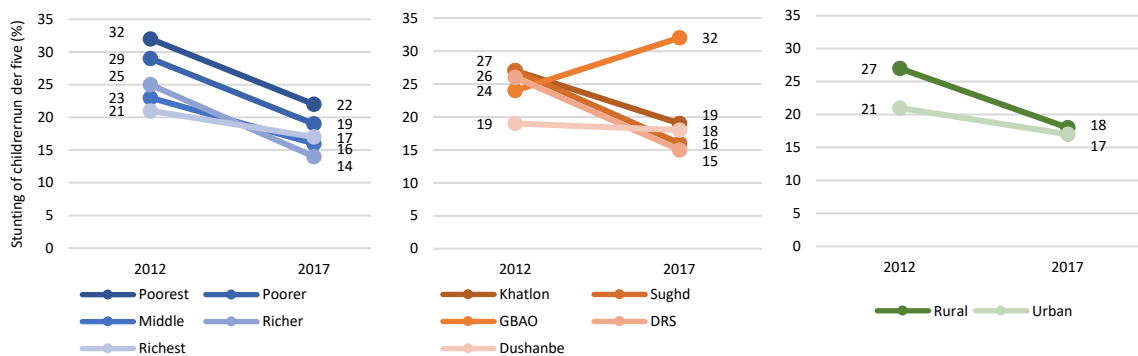
Source: DHS 2012 and 2017.

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[29] The concentration index, which takes on values between -1 and 1, with 0 indicating perfectly equal outcomes across wealth quintiles, negative values concentration among the poor, and positive values concentration among the rich (O'Donnell et al. 2007), sank from -0.1 in 2012 to -0.18 in 2017

[30] Anemia is indicated by a decrease of hemoglobin in the blood which is needed to transport oxygen to tissues and organs in the body. Iron deficiency is the main cause of anemia worldwide with other causes including parasitic diseases (malaria, hookworm, other helminths), other nutritional deficiencies, chronic infections, and genetic conditions. Anemia can hinder cognitive development, cause stunting, and increase morbidity from infectious disease (Stelle, Kalea, and Pereira 2019).

[31] The concentration index of stunting fell from -0.09 to -0.08 between 2012 and 2017.

The average Tajik child born today is estimated to realize only 50 percent of the productive potential she would attain in full health and with high quality schooling. The World Bank's Human Capital Index (HCI) quantifies the long term economic costs of lacking health and education for every country (Kraay 2018). Grounded in the empirical literature on the impacts of health and education on individuals' lifetime earnings, the index is a product of three equally weighted drivers of human capital: (1) the share of children surviving until age five and therefore expected to ever join the workforce; (2) the share of lifetime income attainable with 14 years of quality schooling which is realized by a country given its current average years and quality of schooling; and (3) the share of lifetime income attainable if no children were stunted and everyone survived from age 15 and 60 that is realized by a country given its current stunting and adult mortality rate. As the product of three shares, the HCI assumes values between 0 and 1, and, multiplied by 100, gives the percentage of the full productive potential the average child born today can expect to attain over her lifetime, assuming current levels of health and education in her country persist. In the 2020 version of the HCI (World Bank 2020b) Tajikistan achieves a score of 0.5, a drop of four points compared to the 2018 version brought about by the economic and health crises induced by COVID-19. The

Figure 4.9: Relationship between 2020 Human Capital Index score and 2019 GNI per capita
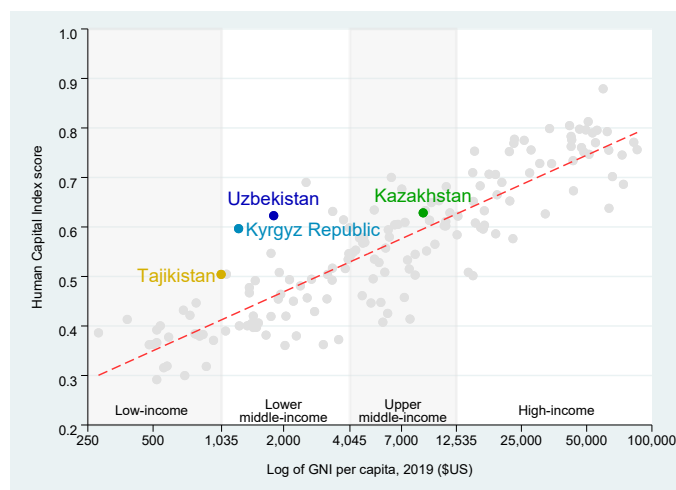
Source: World Development Indicators
Notes: Each dot represents a country. World Bank's 2019 thresholds used for income group classification. Dashed red line represents the fitted linear relationship between countries' log GNI per capita and their HCI score.

fifty percent loss of productive potential among Tajik newborns due to shortfalls in health and education puts Tajikistan roughly thirteen points below Kazakhstan, 10 points below the Kyrgyz Republic, and 12 points below Uzbekistan. Despite falling behind its regional peers, Tajikistan's HCI score is high for its income level, as the country outperforms all other low-income countries and many countries in the lower- and even upper-middle-income categories (Figure 4.9).

PART 5 – HEALTH CARE ACCESS

Composite measures of health coverage indicate that Tajikistan does well for its income level but lags regional peers and is still far from achieving UHC. Several composite measures of health service coverage across countries have recently become available (Hogan et al. 2018, Wagstaff and Neelsen 2020, Lozano et al. 2020). Figure 5.1 and Figure 5.2 show the relationship of two of these indices with GNI per capita. Figure 5.1 uses the effective service coverage index developed by IHME which ranks countries in terms of their performance on 23 effective coverage indicators spanning health promotion, prevention, and curative care for all age groups (Lozano et al. 2020). The indicators are selected based on their potential health gains and the data is largely modelled. By contrast, the service coverage index by Wagstaff and Neelsen (2020) in Figure 5.2 is derived from a more limited set of eight indicators, mainly based on household survey data.

Both indices rank countries on a scale of 0 to 100, with higher values representing better performance, and a score close to 100 indicating that UHC—everyone accessing the health services they need—has been achieved. Despite their methodological differences, results across the two indices are qualitatively similar in general (Spearman rank correlation coefficient 0.85), and with regards to Tajikistan in particular. With index scores just below 50, the country is estimated to be halfway on its journey to UHC, lags its regional peers Kyrgyz Republic and Kazakhstan, but performs well compared to other low- and lower-middle income countries.[32]

Figure 5.1: IHME Effective Coverage Index and GNI per Capita

Figure 5.2: Wagstaff and Neelsen (2020) Service Coverage Index and GNI per Capita
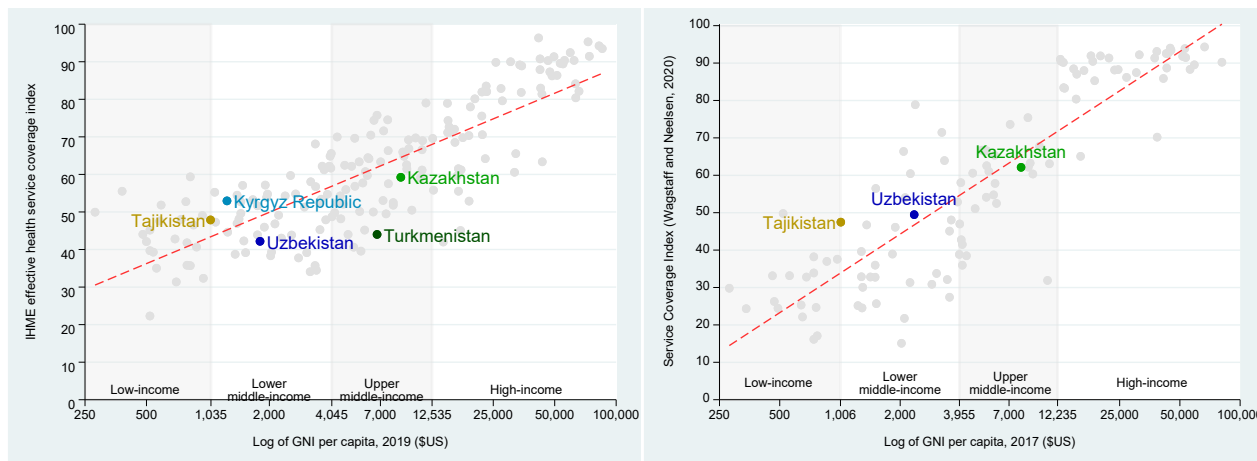
Source: IHME index data come from Lozano et al. (2020) and GNI per capita (Atlas method) data from World Development Indicators

Notes: Each dot represents a country. World Bank income group thresholds for 2019 (Figure 5.1) and 2017 (Figure 5.2) used for income group classification. Dashed red line represents the fitted linear relationship between countries' log GNI per capita and the respective service coverage index.

Much of the gains in composite coverage measures come from improvements in MCH coverage indicators, some of which are nearing universal levels. Unpacking of the composite index scores reveals important variations in coverage between different health care access indicators for Tajikistan. Most indicators in the domain of MCH care have improved over time and some, such as skilled birth attendance, are now nearing universal coverage (Figure 5.3). MCH care indicators in Tajikistan and its regional peers also are far better than the low- and lower-middle-income country averages (Figure 5.4).

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[32] The correlations of WHO's service coverage index which is used for tracking SDG 3.8.1 with IHME's effective coverage index and Wagstaff and Neelsen's service coverage index are 0.84 and 0.81, respectively. Tajikistan performs slightly worse than the Kyrgyz Republic, Kazakhstan, Turkmenistan, and Uzbekistan in the WHO index (Hogan et al. 2018). The WHO index, however, estimates Tajikistan to be much closer to UHC, with a score of 65 out of 100—a result of the index including not only indicators of health care utilization but also public health indicators like access to basic sanitation, health behaviors like smoking, and regulatory and supply-side indicators like compliance with international health regulations and the number of hospital beds and doctors per population on which Tajikistan performs well.

Figure 5.3: Trends in Maternal and Child Health Coverage Indicators in Tajikistan, 2000–2017
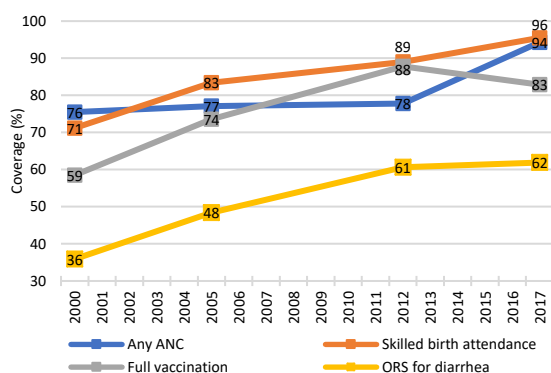
Figure 5.4: Maternal and Child Health Coverage Indicators in Central Asian Countries, Latest Available Data
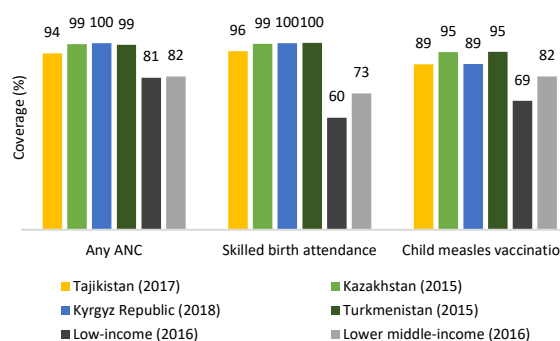
Source: DHS and MICS for Central Asian countries, World Development Indicators for low- and lower-middle-income country averages.

Notes: Any ANC is the percentage of pregnancies in the last two years of women age 15–49 with at least one antenatal care visits. *Full vaccination* is the percentage of children age 15–23 months having received Bacillus Calmette-Guérin (BCG), measles/Measles-Mumps-Rubella (MMR), three doses of polio (excluding polio given at birth) and three doses of diphtheria-pertussis-tetanus (DPT)/Pentavalent vaccinations, either verified by vaccination card or by recall of respondent. *Skilled birth attendance* is the percentage of most recent births of women age 15–49 in last two years which were attended by a doctor, nurse, midwife, or auxiliary nurse or midwife. *ORS for diarrhea* is the percentage of children under five with diarrhea in the two weeks before the survey who were given oral rehydration salts (ORS). *Child measles vaccination* defined as percentage of child under two having received the measles vaccination.

While crude MCH coverage has reached high levels, large gaps in effective MCH coverage remain. The high MCH coverage levels in Tajikistan, however, mask important quality gaps. Rates of "effective coverage"—defined as the share of the population in need that receives care of appropriate quality (Boerma et al. 2014, Amouzou et al. 2019)—lie far below crude coverage levels that feed into the composite coverage measures presented above. For example, while 94 percent of pregnant women receive any antenatal care (ANC), only 64 percent complete the recommended minimum of four visits,[33] and just 55 percent also have their first visit in the pregnancy's first trimester (Figure 5.5).[34] Encouragingly, almost every pregnant woman with four or more visits beginning in the first trimester is administered blood and urine testing as well as blood pressure measurement from her ANC provider. A similar chasm exists between crude and effective coverage for birth attendance. Almost all women are tended to by a skilled provider when giving birth, and almost 90 percent also deliver in a health care facility, but only half receive recommended inpatient postnatal care as well.

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[33] In November 2016, the World Health Organization increased the minimum number of recommended visits to eight (World Health Organization 2016c). We present results for the previously recommended minimum of four visits as most of our antenatal care data was collected prior to the change and because the four-visit recommendation is used in the official tracking of SDG 3.8.1.

[34] A recent study in Isfara district (Sughd oblast) reveals a number of cultural reason for the lack of uptake of ANC services (Nabieva and Souares 2019). Decision-making for pregnancy care often lies with mothers-in-law who—especially when older than 50 years—tend to have little trust in the value of ANC. Moreover, the recent introduction of predominantly male family doctors is reported to discourage care-seeking among pregnant women who were formerly primarily tended to by almost exclusively female maternity specialists.

Figure 5.5: Crude and effective coverage of antenatal care and skilled birth attendance in Tajikistan, 2017
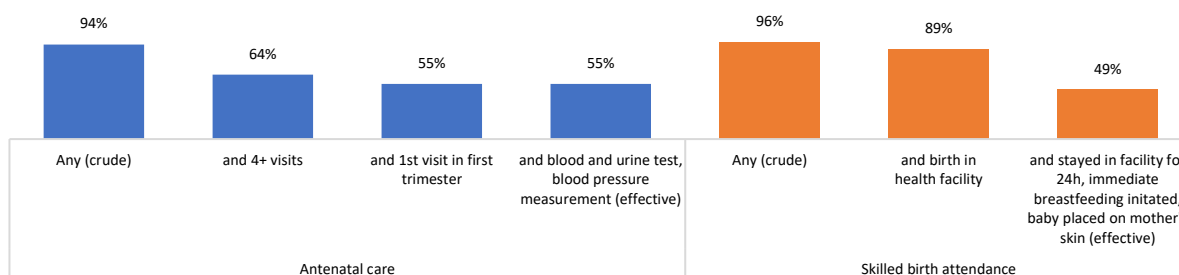
Source: DHS.

Notes: Effective coverage can be thought of as a cascade of care which begins with crude coverage, typically defined as consulting a provider for a condition, at the beginning and effective coverage, defined as completing the appropriate treatment, at the end. The full cascade typically cannot be shown empirically for a lack of data, but more detailed information on MCH care has recently become available in the DHS that allow distinctions between crude and (more) effective coverage like in the above chart.

Unmet need for NCD prevention and treatment is widespread, indicating that the health care system is ill-equipped to address the challenges of the epidemiological transition. The few reliable NCD coverage data from Tajikistan indicate very high rates of unmet health care needs for the growing share of the Tajik population suffering from NCDs (Figure 5.6). Less than 10 percent of adult females have ever undergone a screening for cervical cancer; only 13 percent of the third of adult Tajiks who are hypertensive is on medication and for less than a third of those on medication their blood pressure is below hypertensive levels, indicating low patient adherence and/or poor prescription practices and drug quality. Almost no one among the 10 percent of Tajiks with high cholesterol is aware of their condition or takes medicines for it, and rates of disease awareness and treatment are 50 percent and 20 percent for the 1.2 percent of the population who have Type 2 diabetes. These findings, albeit only representing a fraction of the full NCD burden in the country, indicate that Tajikistan is already struggling to meet the challenges of its accelerating epidemiological transition.

Figure 5.6: Access to NCD Care in Tajikistan, 2016
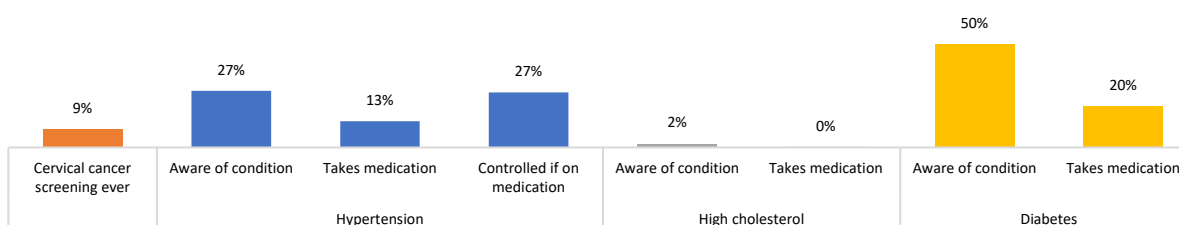
Source: Own calculations based on Tajikistan 2016 STEPS. *Cervical cancer screening ever* is the share of women age 18–70 who ever had a pap smear exam. Individuals with hypertension and high cholesterol defined as in notes to Figure 4.4. Individuals with diabetes defined as capillary whole blood value ≥ 11.1 mmol/L) or currently on medication for diabetes. *Controlled* hypertension is the share of the population that is hypertensive or takes anti-hypertensive drugs for whom systolic blood pressure is under 140 and diastolic blood pressure is under 90. *Diabetes* is Type 2 diabetes mellitus

Unmet need for care is heavily concentrated among the poor. Figure 5.7 shows the distribution of key health coverage indicators by household wealth. In this "quintile dot-plot," the lines connecting the average coverage values of the poorest quintile (orange dots) and the richest quintile (blue dots) indicate the magnitude of coverage inequity. Measles vaccination is the only

indicator for which the poorest have slightly better coverage than the rich—likely the results of targeted vaccination campaigns. For all other indicators, there are stark wealth inequalities. For hospital admission, the absolute quintile distance between the richest and poorest is small, at 3.7 points, but given that the average admission rate is just seven percent, this represents a 70 percent higher rate among the richest compared to the poorest quintile. For four or more ANC visits, the richest-to-poorest quintile distance is 29 percentage points, as the coverage of the richest (75 percent) is 64 percent above that of the poorest (46 percent). Tajikistan is the only country in the region with such dramatic inequity in the share of pregnancies for which the recommended number of visits is completed; for Kazakhstan, Kyrgyz Republic, and Turkmenistan, rates are near universal and the richest-to-poorest quintile distance does not exceed more than three percentage points.[35]

Figure 5.7: Wealth Inequalities in Service Coverage in Tajikistan, 2017
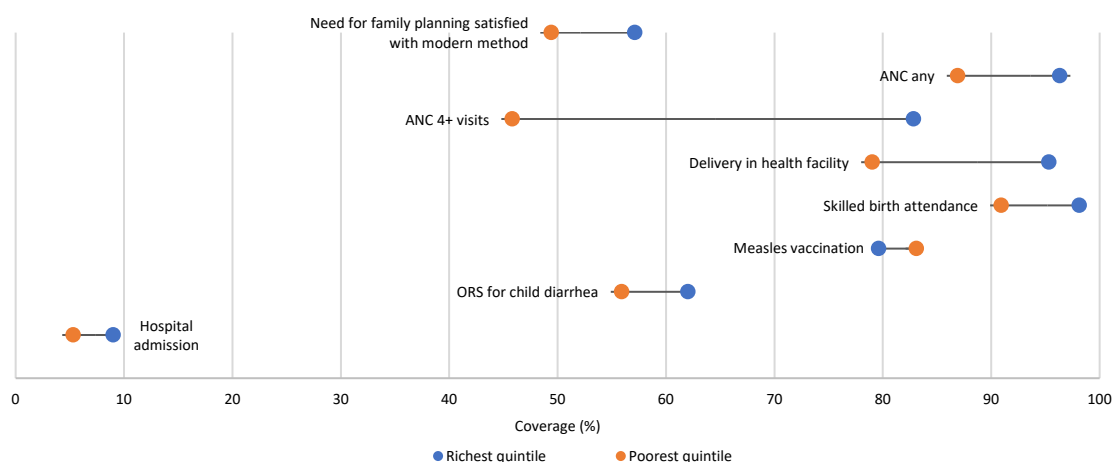
Source: Data on all indicators other than hospital admission from 2017 DHS. Data on hospital admissions from 2011 World Bank Household Survey.
Notes: Need for family planning satisfied with modern methods defined as in (Barros et al. 2015). Any ANC, Skilled birth attendance, and ORS for diarrhea defined as in notes to Figure 5.3. *ANC 4+ visits* defined as percentage of pregnancies in the last two years of women age 15–49 with at least four antenatal care visits. *Measles vaccination* is the percentage of children age 15–23 months having received a measles/Measles-Mumps-Rubella (MMR) vaccination, either verified by vaccination card or by recall of respondent. *Hospital admission* defined as share of adults with at least one hospital admission in the past 12 months.

There are also large regional variations in health care access. The rate of pregnancies with at least four antenatal care visits is more than twice as high in Sughd and Dushanbe than in Khatlon, where it reaches a mere 43 percent, and there is an 18 percentage-point difference in favor of urban compared to rural areas (Figure 5.8). Regional coverage differences are less pronounced for facility delivery and measles vaccination, but in both cases, they amount to more than 20 percentage points between the least (GBAO) and best (Sughd) performing regions. Rural-urban discrepancies exist but are generally less pronounced than those between regions.

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[35] Data from the 2015 Kazakhstan, 2018 Kyrgyz Republic, and 2019 Turkmenistan MICS.

Figure 5.8: Regional and Urban-Rural Inequities in Service Coverage in Tajikistan, 2017
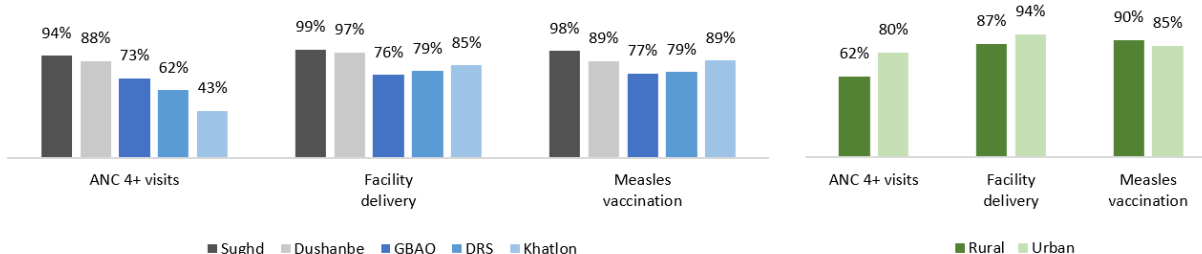
Source: 2017 DHS.

Lack of money and geographical distance are the main reasons why women forgo needed health care in Tajikistan, and the poor are disproportionately affected. Figure 5.9 shows the share of Tajik women who experience access problems when in need of health care in 2012 and 2017. All four types of access issues—getting permission to go, not wanting to go alone, distance to facility, and getting money for treatment—are less prevalent in 2017 than five years earlier. In 2017, 42 percent of women experienced one or more major access problem. The single most important issue, experienced by 35 percent of women, was finding money for treatment, a reflection of the important role of (informal) patient payments in the Tajik health care system. For 21 percent geographical access is a major problem, and cultural factors and safety issues—getting permission to go and not wanting to go alone—are reported 18 percent and 26 percent, respectively. Breaking the 2017 access problems down by household wealth quintile reveals that they remain starkly more prevalent among the poor (Figure 5.10). For instance, the poorest-to-richest quintile gap in getting money for treatment was 37 percentage points in 2017, making the poorest quintile almost three times more likely to experience financial access problems than the richest quintile.

Figure 5.9: Issues Reported to Be Big Problems for Accessing Health Care When Sick by Tajik Women, 2012 and 2017

Source: DHS 2012 and 2017.

Figure 5.10: Issues Reported to Be Big Problems for Accessing Health Care When Sick by Tajik Women by Wealth Quintile, 2017

Percentage of women age 15-49 reporting issue is big problem for accessing care when sick (%)

● Richest quintile ● Poorest quintile
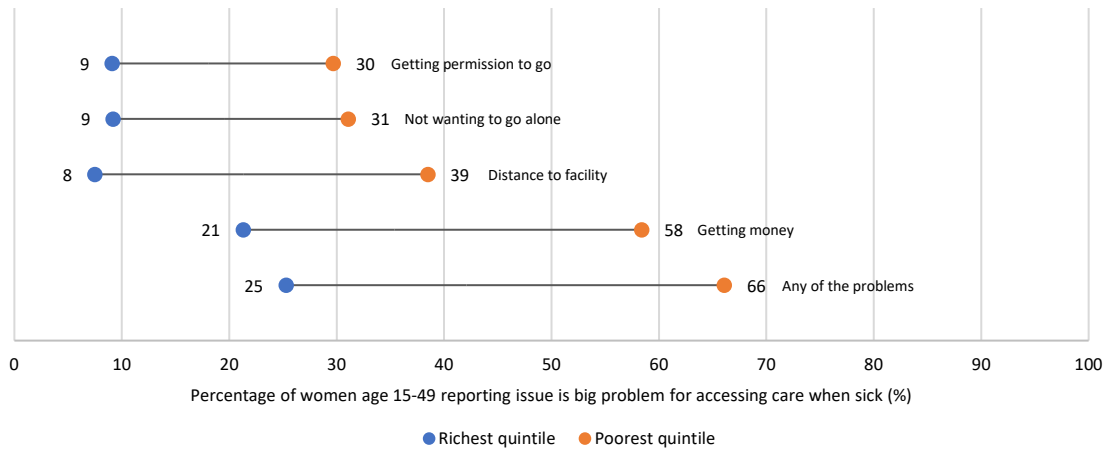
Source: DHS 2017.
Notes: Lines connecting the average values of the poorest quintile (orange dots) and the richest quintile (blue dots) indicate the magnitude of inequality.

Cultural and geographic access problems vary considerable by region and are much more common in rural than in urban settings. Figure 5.11 and Figure 5.12 show regional and urban-rural differences in the prevalence of health care access problems for women. The share of women experiencing financial access problems is almost twice as high in poorer and less densely populated Khatlon and GBAO than in Dushanbe and Sughd, and similar discrepancies are found for cultural ("getting permission"), security ("not wanting to go alone") and geographic ("distance to facility") access barriers. The regional differences in part reflect differences in the level of urbanization, as the gaps in access problems are similar in magnitude to those emerging in the urban-rural comparison. All access problems are more common among rural women, and the relative discrepancies are most pronounced for cultural, safety, and geographic access issues which rural women are least twice as likely to experience.

Figure 5.11: Issues Reported to Be Big Problems for Accessing Health Care When Sick by Tajik Women by region, 2017

■ Dushanbe ■ Sughd ■ Khatlon ■ RRS ■ GBAO
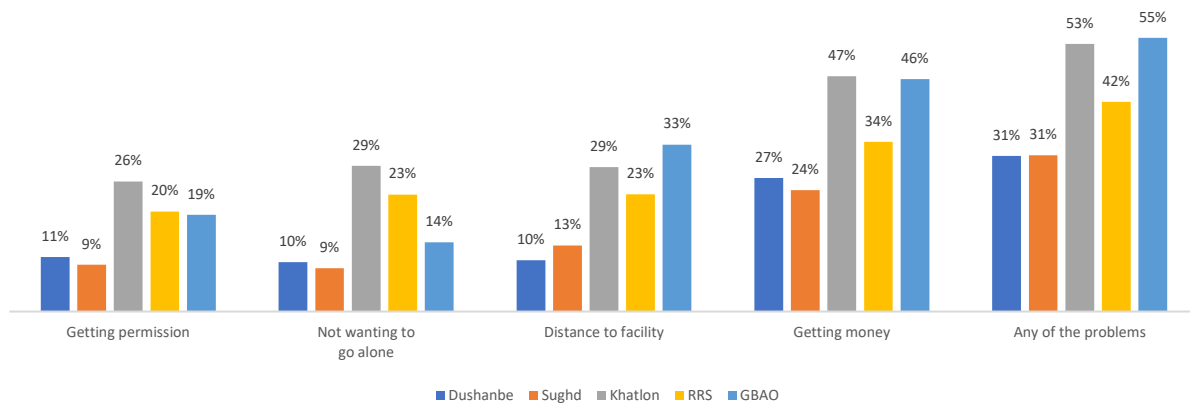
Source: DHS 2017.

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Figure 5.12: Issues Reported to Be Big Problems for Accessing Health Care When Sick by Tajik Women by Area of Residence, 2017
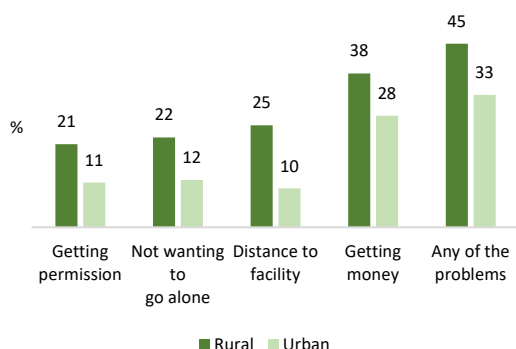
Figure 5.13: Estimates of Annual Deaths in Tajikistan Which Could Be Avoidable through Population Level Interventions and Better Health Care Access and Quality

Source: DHS 2017.
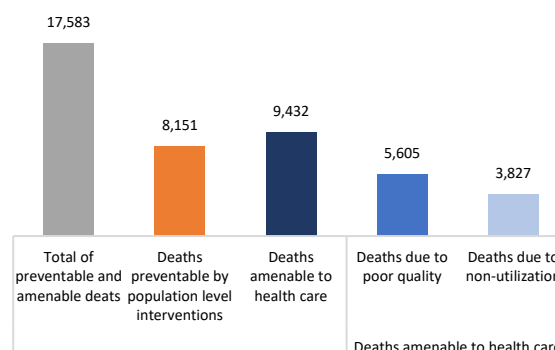
Source: Kruk et al. (2018).
Notes: Estimates based on mortality data from 2016 Global Burden of Disease study (Naghavi et al. 2017)

An estimated 9,400 deaths per year could be avoided in Tajikistan by better health care access and quality. Kruk et al. (2018) estimate the number of deaths amenable to improved health care access and quality for low- and middle-income countries using country mortality profiles from the 2016 Global Burden of Disease study (Naghavi et al. 2017) and case fatality rates from high-income countries with strong health care systems. They find that 9,432 deaths could be avoided with improved access to quality health care (Figure 5.13). Of the latter deaths, roughly 60 percent are estimated to be due to poor care quality, with the rest being caused by low levels of utilization.

Little is known about disruptions in health service due to the COVID-19 pandemic, but temporary drops in access of at least 20 percent are likely which may cause more than 2,000 extra under-five deaths. Few data are available on the impact on the COVID-19 pandemic on health care access and utilization in Tajikistan. In recent rounds of the periodic "Listening to Tajikistan" survey, 20 percent of households report being unable to access needed health care (World Bank 2020d). This is in line with modeled estimates by Roberton et al. (2020), who suggest reductions in MCH care coverage of 19–27 percent in their middle-impact scenario, which they estimate to lead to 2,202 additional under-five deaths over the course of 12 months.[36]

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[36] Reduction is 10–19 percent in their low impact scenario which leads to an additional 1,101 under-five deaths over a year, and 39-52 percent in their high impact scenario with 4,404 additional under-five deaths.

PART 6 – HEALTH CARE EXPENDITURE

TOTAL HEALTH CARE EXPENDITURE

Total health expenditures have grown at a fast pace over the past decade in Tajikistan. Total health expenditure—the sum of current health spending and health capital investments— has increased in Tajikistan in the past decade, both in nominal and real terms (Figure 6.1). With an annualized growth rate of 5.9 percent and an overall growth of 77 percent during 2008–2018, Tajikistan's total health expenditures has grown at the third fastest pace among Central Asian countries. It has also grown more than twice faster than the low-income country average, and somewhat faster than the lower-middle-income country average of 4.6 percent (Figure 6.2).

Figure 6.1: Trends in Real and Nominal Total Health Expenditure (THE) per capita in Tajikistan in Tajik Somoni (TJS), 2008–2018
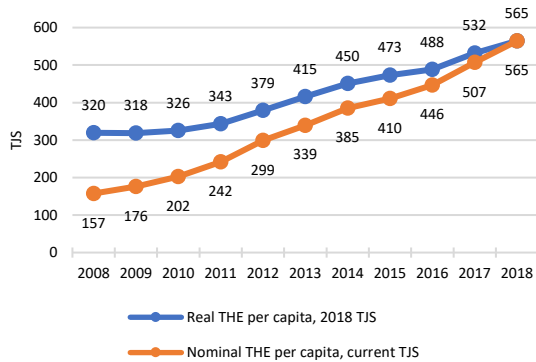
Figure 6.2: Annualized and Overall Growth Rate of Real Total Health Expenditure over 2008–2018 Period in Central Asia
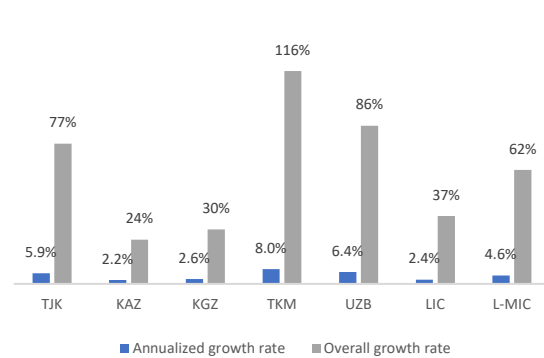
Source: Own calculation based on WHO Global Health Expenditure Database (GHED)
Notes: Total health expenditure computed by adding capital health expenditure to current health expenditure. KAZ = Kazakhstan, KGZ = Kyrgyz Republic, TKM = Turkmenistan, UZB = Uzbekistan, LIC = Low-income country population-weighted average, L-MIC = Lower middle-income country population-weighted average.

At US$62 per capita, total health expenditures are the lowest in the Central Asia region. At US$62 (257 international $), Tajikistan's 2018 per capita total health expenditures fell right between the low- and lower-middle-income averages of US$35 and US$88 (201 international $ and 298 international $) and was the lowest in Central Asia (Figure 6.3 and Figure 6.4).[37]

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[37] The benefit packages are priced in 2016 US$.

Figure 6.3: Trends in Total Health Expenditure Per Capita in Central Asia in Constant Int'l $, 2008–2018
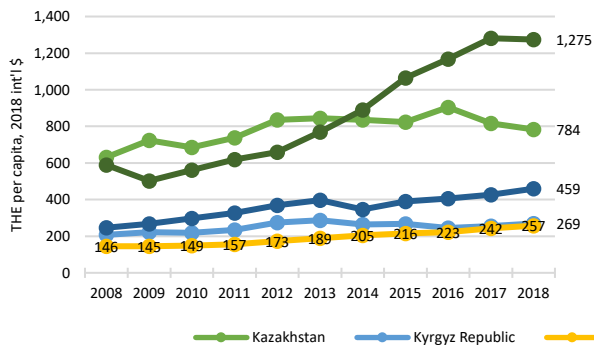
Figure 6.4: Trends in Total Health Expenditure Per Capita in Central Asia in Constant US$, 2008–2018
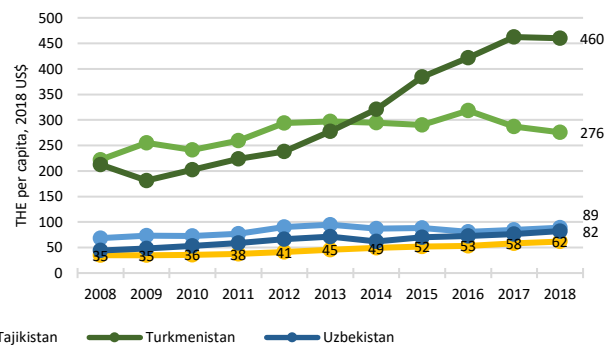
Source: Own calculation based on WHO Global Health Expenditure Database (GHED).
Notes: Total health expenditure computed by adding capital health expenditure to current health expenditure.

Tajikistan spends a high share of its GDP on health care. In 2018, Tajikistan's total health expenditure to GDP ratio had grown to be the highest in Central Asia (Figure 6.5). At 7.2 percent, it also exceeded the low- (5.4 percent), lower-middle- (3.8 percent), and upper-middle-income (5.9 percent) averages, and trailed only the 11.5 percent average for high-income countries

Figure 6.5: Total Health Expenditure (THE) in % of GDP in Selected Central Asian Countries, 2008–2018
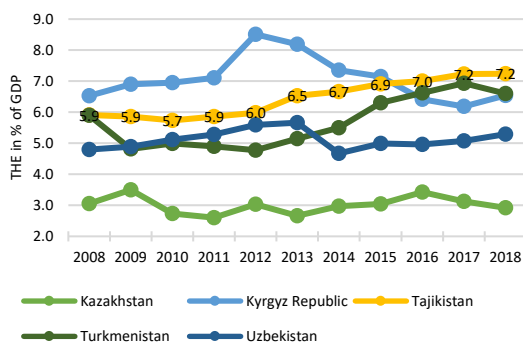
Figure 6.6: Capital Investments as a Share of Total Health Expenditure (THE), 2008–2018
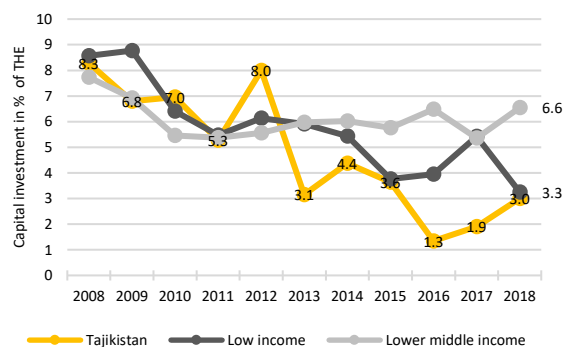
Source: Own calculation based on WHO Global Health Expenditure Database (GHED).
Notes: Total health expenditure computed by adding capital health expenditure to current health expenditure.

The capital share of total health expenditures is below levels required to maintain appropriate stocks of health infrastructure and equipment. Breaking Tajikistan's total health expenditures down into current (running) and capital expenditures reveals a decrease in the capital spending share over the 2008–2018 period. After an uptick in recent years, it stands at 3 percent, and thus below the low- and lower-middle-income averages (Figure 6.6).[38] Benchmarking against capital spending needs required to provide basic, quality care reveals the magnitude of underinvestment in the Tajik health care system. Stenberg et al. (2019) estimate that construction and maintenance of appropriate outpatient and primary care infrastructure alone requires *additional* annual capital investments of US$8 per capita in low-income countries and US$4 per capita in lower-middle-income countries—far above the less than US$2 per capita

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[38] The capital share in total health expenditures was 8.9 percent in upper-middle- and 3.8 percent in high-income countries in 2018.

currently spent on health capital in Tajikistan. Importantly, as detailed in Part 6, the underinvestment in Tajikistan does not relate to the number of health facilities, in particular small hospitals and primary care providers, of which the country has many more per capita than its Central Asian neighbors and countries of similar income levels. Rather, it pertains to the quality of the existing infrastructure and the availability of medical equipment. To gain most value out of investments into infrastructure and high-cost equipment, planning tools such as facility masterplans, of which the most recent one was undertaken in 2011[39] are useful.

Households are responsible for two-thirds of total health spending in Tajikistan, the public sector for a quarter, and development partner funding for the remaining seven percent. When examining total health expenditures by expenditure source according to, reveals a very stable distribution over the last decade, where private households,[40] with an expenditure share of two thirds in 2018, are the most important funders of health care (Figure 6.7). Domestic government funding, at about a quarter of total health expenditures, is a distant second, while external funding amounted to about 7 percent. For reference, Figure 6.8 shows the share of private, public and external funding in current health care expenditures instead of total health expenditures, as the former are used to assess health care spending in the remainder of this report. Differences between Figure 6.7 and Figure 6.8 mainly arise in terms of the public and external expenditure shares, as these are the main sources of capital investments which are included in total health expenditures but not current health expenditures.

Figure 6.7: Distribution of Total Health Expenditure (THE) across Public, Private and External Sources in Tajikistan, 2011–2018
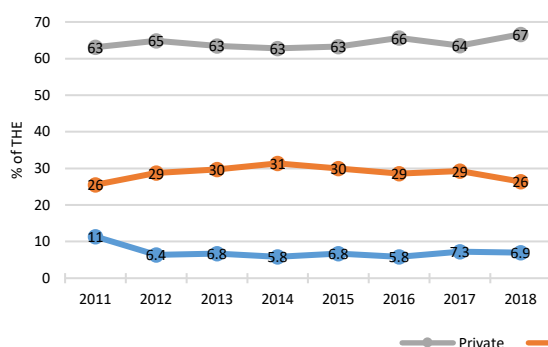
Figure 6.8: Distribution of Current Health Expenditure (CHE) across Public, Private and External Sources in Tajikistan, 2008–2018

Source: Tajikistan Joint Annual Review 2019.
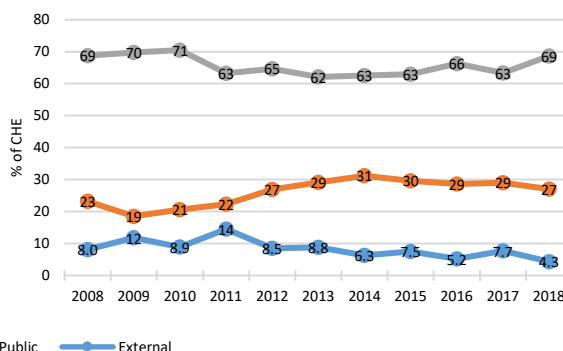
Source: Global Health Expenditure Database (GHED).

There are substantial regional differences within Tajikistan in the amount and sources of per capita current health expenditures. No subnational breakdowns of current health expenditures are available in recent years from Tajikistan's National Health Accounts. They are therefore approximated for the five first-subnational level administrative regions by summing private health care spending per capita from Tajikistan's annual Household Budget Survey and public, non-republican (oblast and rayon) health care spending from the country's District Health Information System (DHIS). By this method, per capita total health expenditures is highest in the capital, Dushanbe, with its large number of public and private health care providers and relatively affluent population (Figure 6.9). GBAO has the second highest spending per capita, the result of

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[39] Strategic plan for rationalization of health facilities of the Republic of Tajikistan for the period 2011–2020, approved by Government RT decree #149 from April 01, 2011.

[40] The use of "households" in this report refers to private, and not institutional households.

receiving by far the largest public per capita transfers due its low population density, and the correspondingly high health care worker and health facility to population ratios. Sughd's per capita spending is just below that of GBAO, but it is mainly financed from private sources, a consequence of Sughd being the richest of the five regions and having the most developed private health care sector. Per capita total health expenditure is lowest in Khatlon and the RRS which are also the poorest regions of the country. With one-third of the population living below the poverty line, households in the two oblasts are unable to compensate for having the lowest per capita public spending with additional private spending.

Figure 6.9: Regional Distribution of Current Nonrepublican Public and Private Health Expenditures in Tajikistan, 2017–2018
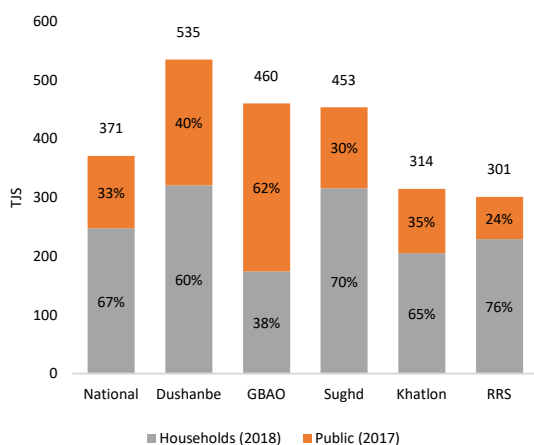
Source: Author's calculations based on data from Tajikistan's Household Budget Survey (HBS) for household spending and from the District Health Information System (DHIS) for public spending.
Notes: 1 TJS = 0.11 US$, 0.46 international $.

Figure 6.10: Distribution of Current Health Expenditure (CHE) across Public, Private, and External Sources in Central Asia, 2018
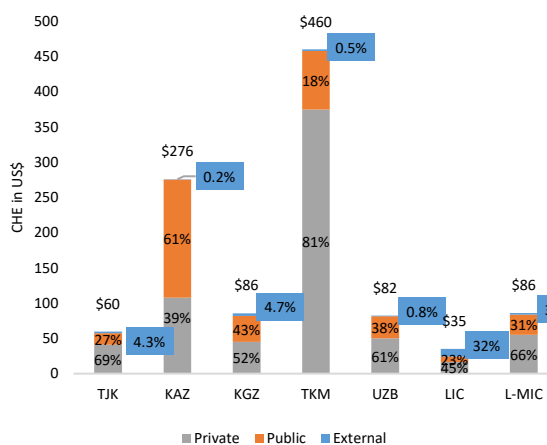
Source: Global Health Expenditure Database (GHED)
Notes: Country income group values are from own calculations of population weighted averages.

International comparison reveals stark differences in health care funding profiles across Central Asia, with much higher public spending shares in Kazakhstan and the Kyrgyz Republic than in Tajikistan. Comparison with other Central Asian countries shows that the distribution of funding sources in Tajikistan is similar to that in Uzbekistan and the lower-middle-income country average, whereas public spending shares are much higher in neighboring Kyrgyz Republic and Kazakhstan (Figure 6.10). Moreover, Tajikistan's relatively modest external expenditure share mirrors its status as a "cusper" between low- and lower-middle-income levels. All three funding sources are discussed in more detail in the following sections.

<div align="center">

PRIVATE HEALTH CARE EXPENDITURE

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Tajikistan's private shares in total health expenditures and GDP are the second highest in Central Asia. The GDP share is far above that of countries of similar income levels. The recent uptick in Tajikistan's private total health expenditures share to now 69 percent is in line with trends in the rest of Central Asia (Figure 6.11). Tajikistan's growth in private health spending has also outpaced that of the GDP since 2011, with the private health spending share in GDP amounting to 5 percent in 2018, second only to Turkmenistan in the Central Asian region and twice the low- and lower-middle-income averages (Figure 6.12).

Figure 6.11: Trends in Private Health Expenditure Share in Current Health Expenditures (CHE) in Central Asia, 2008–2018
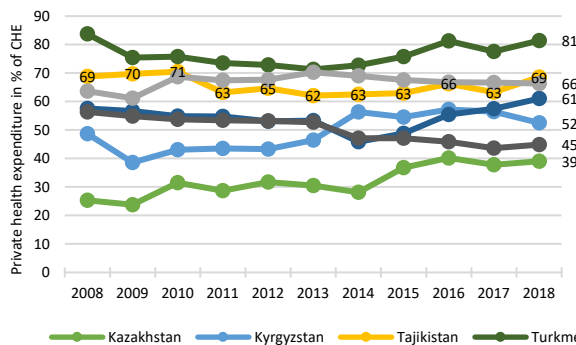
Figure 6.12: Trends in Private Health Expenditure GDP Shares in Central Asia, 2008–2018
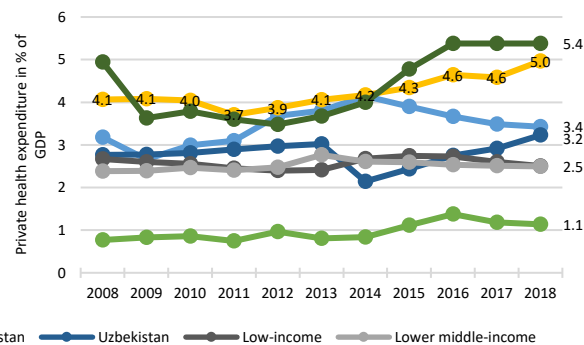
Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

Because of its low GDP per capita, the high GDP share of private health spending in Tajikistan does not translate into high absolute spending levels. All private health spending in Tajikistan is out-of-pocket. Despite almost doubling from 2008, private health spending per capita, in 2018, remained the second lowest in the region in international dollar terms, at 171, (Figure 6.13) and the lowest in US dollar terms, at 41 (Figure 6.14). Therefore, private health spending falls between the low- and lower-middle-income country US dollar averages of 16 and 55, and close to the lower-middle-income international dollar average of 191. Absent contributory social health insurance or meaningful private insurance schemes, all but a negligible fraction of private medical spending in Tajikistan, 99.7 percent, is out-of-pocket.[41]

Figure 6.13: Trends in Private Health Expenditure in Constant International $ in Central Asia, 2008–2018
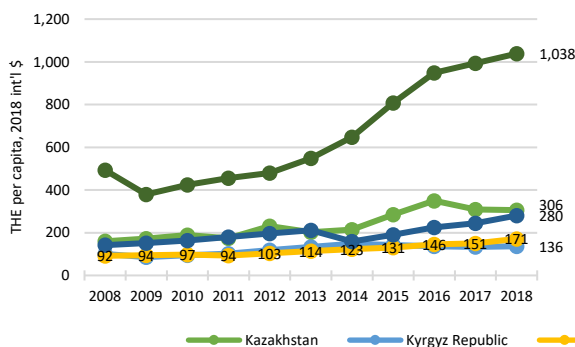
Figure 6.14: Trends in Private Health Expenditure in Constant US$ in Central Asia, 2008–2018
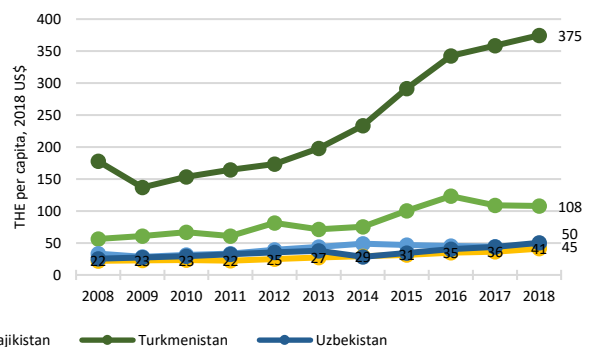
Source: Global Health Expenditure Database (GHED).

The regional distribution of private health care spending in Tajikistan follows that of incomes. Functionally, medical goods account for 80 percent of private health care spending. Formal copayments to public providers represent only a small fraction of all household payments for health services. Figure 6.15 show the regional distribution of private per capita health care spending across Tajikistan's five first-level administrative regions, as well as its functional distribution over medical goods and services. Private health care spending is

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[41] Data from WHO's Global Health Expenditure database.

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about 50 percent higher in Dushanbe and Sughd, the two richest regions, than in the poorer rest of the country. Without coverage for outpatient drugs and medical devices for the majority of the population, medical goods account for 80 percent of private health care spending nationally.[42] Medical goods also represent the majority of private spending across all regions, but there are important regional differences: In Sughd, with its larger private health care sector, 38 percent is spent on services, whereas the service shares are below 10 percent in Khatlon and GBAO that have almost no private providers. Further breakdown of the health service payments using data from Tajikistan's National Health Accounts (NHA) reveals that only a small fraction are formal copays under the country's two coverage schemes, the BBP and Decree 600. During 2013–2018, the average copay-share in OOPEs made to public health service providers was only 8 percent, with the remaining 92 percent being accounted for by payments to private providers and, more importantly, by unofficial payments to public providers (Figure 6.16).[43]

Figure 6.15: Regional and Functional Distribution of Private per capita Health Care Spending in Tajikistan, 2018

Figure 6.16: Share of Out-of-Pocket Expenditures Which Are Formal Copayments, 2013–2018
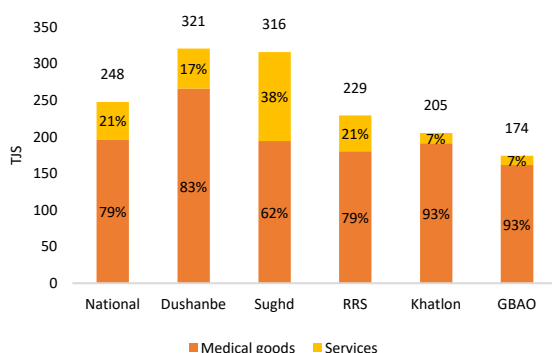
Source: Own calculations based on data from Tajikistan's Household Budget Survey (HBS).
Notes: 1 TJS = 0.11 US$, 0.46 international $.
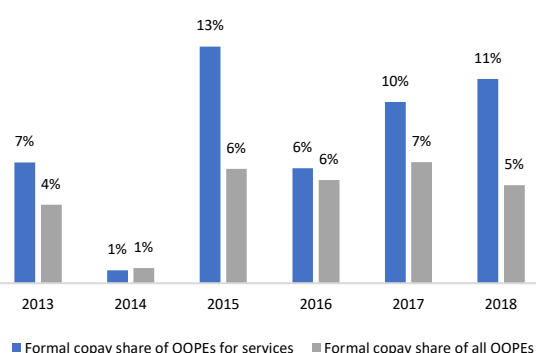
Source: Own calculations based on National Heath Accounts (NHA).

Half of Tajik households report making informal payments when using public health care. Further evidence for the high prevalence of unofficial payments to public health care providers in Tajikistan comes from the joint World Bank/European Bank for Reconstruction and Development (EBRD) Living in Transition Surveys (LITS). In 2016, almost every second Tajik household that used public health care over the previous 12 months reported making informal payments or gifts to providers—more than double the rate in neighboring countries (Figure 6.17). These informal payments and gifts are much more common in rural than urban areas. The single most important reason why Tajiks make them is that they are being asked to by health care providers, which 38 percent of respondents report. Of the remaining 62 percent who make informal payments without being explicitly prompted, three quarters do so because they know payments are expected or in

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[42] There are no data distinguishing OOPEs on medical devices from those on pharmaceuticals, but the latter can be assumed to make up the lion's share of OOPEs on medical goods.

[43] The National Health Accounts data used here do not distinguish non-copay OOPEs that were made to private health service providers from unofficial payments to public providers. Given the very small number of private providers in Tajikistan, and the low share of services they provide (see part 3), it can, however, be assumed that a large share of non-copay OOPEs for health services in Tajikistan are unofficial payments to public providers. The definitory uncertainty may explain the occurrence of small differences between the formal copay shares of all OOPEs shown in Figure 6.16 and the formal copay shares of all OOPEs one may obtain by multiplying the share of OOPE service payments in Figure 6.15 with the formal copay share of OOPEs for services in Figure 6.16.

the hope of better or faster services. Informal payments and gifts to public servants are not limited to the health sector in Tajikistan; equally high or higher shares of citizens make them when interacting with the road police, requesting official documents, during legal proceedings, and when applying for social benefits. Informal payments to public health care providers in Tajikistan have decreased slightly—from 55 percent to 47 percent—between 2016 and 2010, a period during which the BBP and Decree 600 policies whose aim is to curtail informal payments were extended. Other countries in the region, however, achieved much larger reductions over the same time span (Figure 6.18).

Figure 6.17: Informal Payments for Public Health Care and Other Government Sectors in Tajikistan and Other Central Asian Countries, 2016
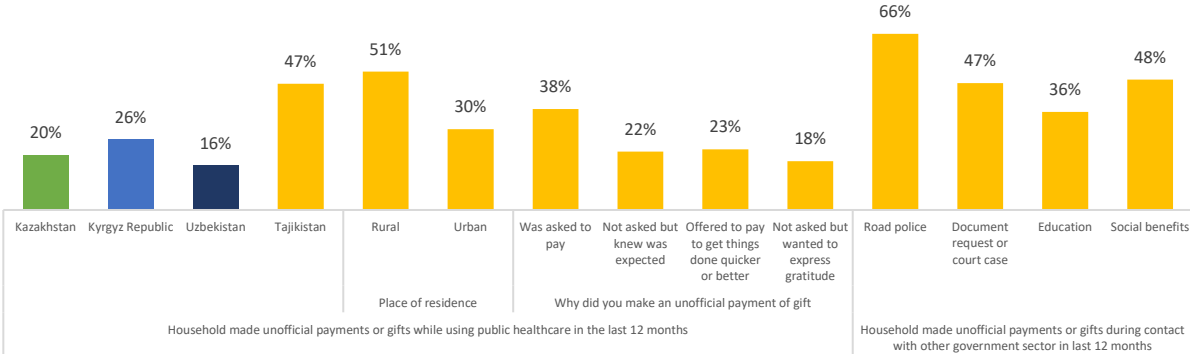
Source: Living in Transition Survey III (2016).

Figure 6.18: Trends in Informal Payments for Public Health Care in Tajikistan and Other Central Asian Countries, 2010 and 2016
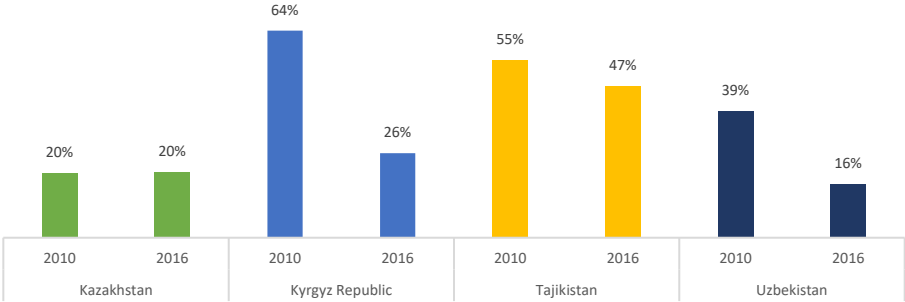
Source: Living in Transition Surveys (LITS) II (2010) and III (2016).

For a high and steadily increasing share of Tajik households, OOPEs on medical goods and informal and formal payments to service providers reach levels where the financial hardship they impose makes them an immediate threat to household welfare. Several measures to identify households experiencing such extreme OOPEs have been proposed in the health economics literature (Wagstaff, Eozenou, and Smitz 2020). The official indicators for tracking SDG 3.8.2, "Financial protection in health," are the share of households using more than 10 percent and 25 percent of their total budget for OOPEs. These "catastrophic" spending thresholds are chosen because they represent OOPE levels where households in low- and middle-income countries are assumed to be forced to cut spending on other essential goods and services such as food, basic clothing, and education. An alternative indicator which sheds more light on the risk of catastrophic health spending among the poor is the share of households using

more than 40 percent of their nonfood budget for OOPEs. (Xu et al. 2003).[44] Finally, financial hardship from OOPEs can be measured by the share of the population which falls under the poverty line when poverty is determined not by consumption including OOPEs—the standard approach—but by consumption net of OOPEs. These measures are referred to as "medical impoverishment," and for global tracking exercises they are based on international poverty lines. SDG 3.8.2, for instance, uses the share of households falling under the poverty lines of 1.90 international dollars and 3.20 international dollars due to OOPEs. The 1.90 international dollar poverty line represents the threshold for extreme poverty that is most prevalent in the poorest countries, whereas the 3.20 international dollar threshold is more suitable for lower-middle-income country contexts.

Figure 6.19: Trends in Catastrophic and Impoverishing Out-of-Pocket Expenditures in Tajikistan, 2013–2018
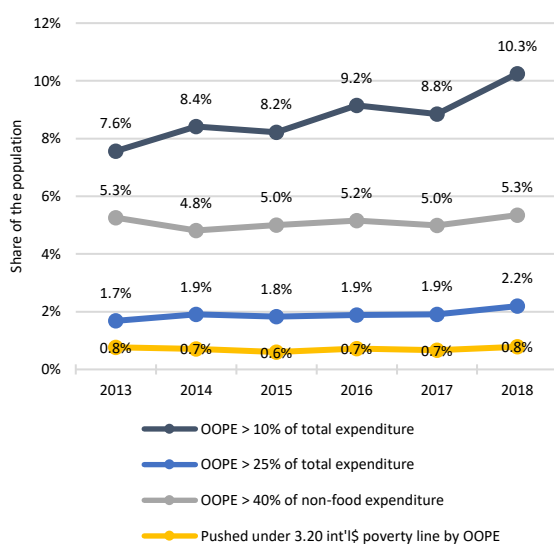
Source: Own calculations based on data from Tajikistan's Household Budget Survey (HBS).

Figure 6.20: Regional Inequalities in Catastrophic Spending at 10 Percent Threshold in Central Asia and within Tajikistan, 2018
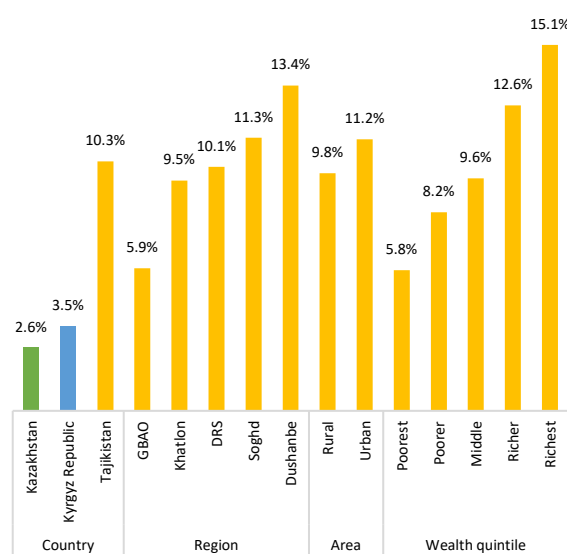
Source: Household Budget Surveys from Kazakhstan (2015), Kyrgyz Republic (2016) and Tajikistan (2018).

Despite the extension of public benefit packages, the share of Tajik households with catastrophic health care spending strongly increased between 2013 and 2018, when it reached 10.3 percent—a much higher rate than in neighboring countries. Figure 6.19 shows 2013–2018 trends in the prevalence of four indicators of financial hardship from OOPEs for Tajikistan which were computed using data from Tajikistan's nationally representative annual Household Budget Survey (HBS). Despite the extensions of Decree 600 and the BBP during this period, the share of households suffering catastrophic medical expenses increased. Specifically, the share of households with OOPEs of more than 10 percent of their total budgets rose by 35 percent to reach 10.3 percent in 2018 and the share of households affected by catastrophic spending at the 25 percent level increased by 30 percent, to reach 2.2 percent. The share of the population with OOPEs greater than 10 percent of the household budget in Tajikistan is three times larger than in the Kyrgyz Republic and four times larger than in Kazakhstan (Figure 6.20)

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[44] This 'capacity to pay approach' is based on the assumption that food spending in low- and middle-income countries is typically not discretionary and that, therefore, only the nonfood, discretionary budget share should be used as the denominator for computing the prevalence of catastrophic spending.

OOPE spending patterns indicate a progressive distribution, but lower rates of catastrophic spending among the poor indicate higher levels of forgone care rather than better financial protection. The rate of catastrophic spending is higher among richer regions and households—for example, while the share of households with catastrophic spending in the poorest quintile amounts to 5.8 percent, it is 15.1 percent in the richest quintile. The progressive distribution of catastrophic spending in Tajikistan, however, does not indicate that poorer households have better health coverage. Instead, as demonstrated in Part 5, the lower catastrophic spending share among the poor likely is due to a higher propensity to forgo needed health care for financial reasons.

Meanwhile, rates of medical impoverishment remained stable due to rising incomes. The share of households with OOPEs above 40 percent of their nonfood spending remained stable over time (5.2 percent as of 2018), as did the share experiencing medical impoverishment at the 3.20 international dollar poverty line, which as of 2018 stood at 0.8 percent. Observing an increasing share of households with catastrophic OOPEs at 10 and 25 percent of consumption while levels of medical impoverishment remain stable may appear contradictory at first glance. It, however, reflects that substantial economic growth occurred over the 2013–2018 period in Tajikistan, which led to a steep reduction in the population with consumption levels near the 3.20 international poverty line. As a result, the share of the population medically impoverished at this poverty line would have rapidly decreased had OOPEs remained stable. Only the disproportionate increase of OOPEs relative to GDP growth,[45] which is mirrored in the rising share of households with catastrophic spending—caused the share of households experiencing medical impoverishment at the 3.20 international poverty line to remain constant.

Remittances form an important source of private health care spending in Tajikistan, and remittance-dependent households will likely forgo health care at increasing rates due to the COVID-19-related drop in remittance-income. An important determinant of OOPEs in Tajikistan are remittances from Tajiks working abroad. As described in Part 2, remittances from mainly Russia typically account for a third or more of Tajikistan's GDP. An analysis of the 2007 Tajikistan Living Standards Measurement Survey (LSMS) estimates that a household whose remittance income increases by one percent increases its OOPEs by almost two percent—a much higher impact than for increases in nonremittance income, and an indication that households earmark remittance income for health spending (Kan 2020). Consequently, higher remittance income is also found to be associated with reductions in households forgoing health care. It is therefore likely that remittance-dependent Tajik households, which are primarily in the poorer segments of the population, will see increasing levels of forgone care in the wake of the COVID-19-induced reductions in remittance income.

The impact of COVID-19 on financial protection indicators is uncertain. It is unclear what impact the COVID-19 pandemic will have on measures of financial protection in Tajikistan. While the denominator—consumption—is likely to diminish, the impact on the numerator—OOPEs—is highly uncertain. OOPEs may increase through increased care-seeking or they may diminish due to higher levels of forgone care for fear of contracting the virus in health care settings or for a reduction in affordability due to COVID-19-related income loss. For a useful interpretation of financial protection trends during the pandemic, it is therefore imperative that rates of catastrophic and impoverishing OOPEs are monitored jointly with indicators of health care access.

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[45] The average Tajik household used 2.4 percent of its entire budget for OOPEs in 2013. The share had risen by 37 percent, to 3.4 percent by 2018.

For a low-income country, Tajikistan receives relatively little foreign aid. Aid flows are comparatively stable over time. Tajikistan's reliance on external development partner funding for health has been on a downward trend. Foreign aid for health peaked in 2011, where it represented 14 percent of total health expenditures (US$5.20), but by 2018, the share had dropped to 4.3 percent (US$2.60) (Figure 6.21 and Figure 6.22). Even during its peak, however, foreign aid never came close to the low-income country average regarding its total health expenditures share or in US$ terms. Instead, aid levels almost exactly match the lower-middle-income country average. Compared to its regional peers, Tajikistan, in line with having the lowest per capita GDP, has the highest total health expenditures aid share and the second highest aid levels in per capita US dollars. The amount of aid for health flowing to the country each year is stable: of 138 low- and middle-income countries receiving external assistance for health between 2008 and 2018, the real US dollar amount received by Tajikistan over this period had the 20th lowest volatility.[46]

Figure 6.21: Trends in External Health Care Funding as a Share of Current Health Expenditure in Central Asia, 2008–2018

Figure 6.22: Trends in External Health Care Funding in per capita Constant US$ in Central Asia, 2008–2018
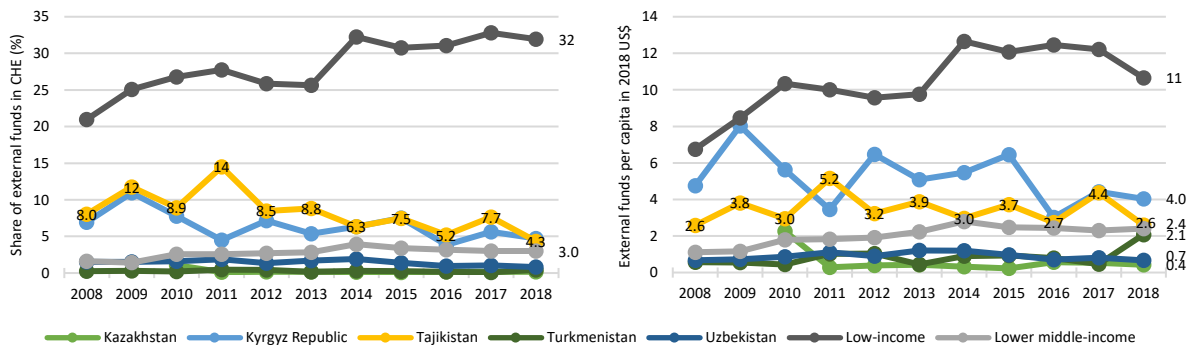
Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

The on-budget share of foreign assistance for health has increased strongly over the past decade but continues to fall short of the 85 percent target. The share of foreign assistance for health that is channeled through the government budget has increased over the past decade, but is lower than in neighboring Kyrgyz Republic and Uzbekistan and, at 58 percent as of 2018, falls substantively short of the 85 percent goal stipulated in the Paris Declaration on Aid Effectiveness and The Accra Agenda for Action (Figure 6.23).[47]

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[46] Aid volatility is computed for his report by diving the standard deviation of the annual logarithmized health aid amount in constant US dollars over the 2008–2018 by the square root of the number of years for which aid data are available for a country over the 2008–2018 period.

[47] https://www.oecd.org/dac/effectiveness/34428351.pdf.

Figure 6.23: Trends in Share of External Health Funding That Is On-Budget in Central Asia, 2008–2018

Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

Figure 6.24: Sources of External Funding for Health in Tajikistan, 2017
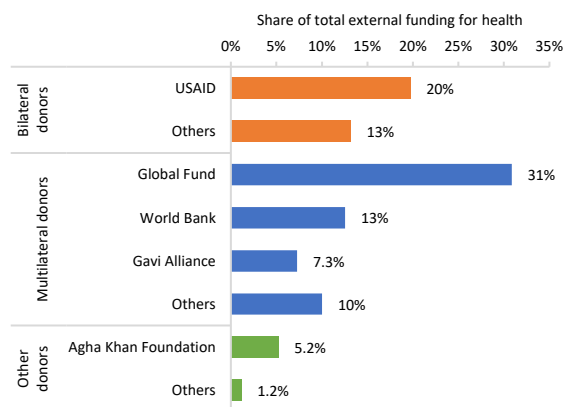
Source: Tajikistan National Health Accounts (NHA).

More than half of foreign aid for health came from multilateral sources in 2017, with the Global Fund being the single most important development partner. As of 2017, one-third of the foreign aid for health in Tajikistan came from bilateral development partners, chiefly the United States, with Germany and Japan a distant second and third (Figure 6.24).[48] Multilateral funding accounted for about 60 percent of foreign aid. The Global Fund to Fight AIDS, Tuberculosis and Malaria was the largest multilateral donor, accounting for over 30 percent of all foreign aid, while World Bank grants represented about 13 percent. Private nongovernmental organizations contributed around 6.5 percent to the total health aid envelope, with most coming from the Agha Khan Foundation.

Several institutions for coordination among development partners and with the government exist. There has been a formal development partner coordination body since the 2010 inception of the Development Coordination Council and its health working group. Moreover, progress toward the goals of Tajikistan's National Health Strategy is assessed in the Joint Annual Reviews, with inputs from the Prime Minister's and the President's Offices, line ministries such as the MoF and the Ministry of Labor, the heads of oblast health departments and managers of health facilities, development partners and civil society organizations (Khodjamurodov et al. 2016). Despite this progress in institutionalizing cooperation and coordination within the development partner community and with the government, a recent case study of the multidevelopment partner-supported BBP laments that a joint timeline for piloting and scale-up and a systematic effort for monitoring and evaluation never existed, and that in general, development partner coordination consisted mostly of information sharing rather than concerted action (Jacobs 2019).

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[48] The analysis uses the 2017 NHA as no data for USAID, one of the biggest donors in the country, are available in the 2018 NHAs.

Figure 6.25: External Health Funding by Health Condition and Functional and Economic Classification, 2018
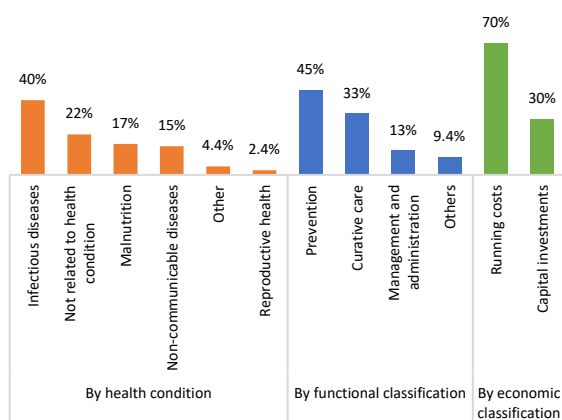
Figure 6.26: Share External Assistance in Total Health Expenditures by Functional and Economic Classification, 2018

Source: Tajikistan National Health Accounts (NHA)
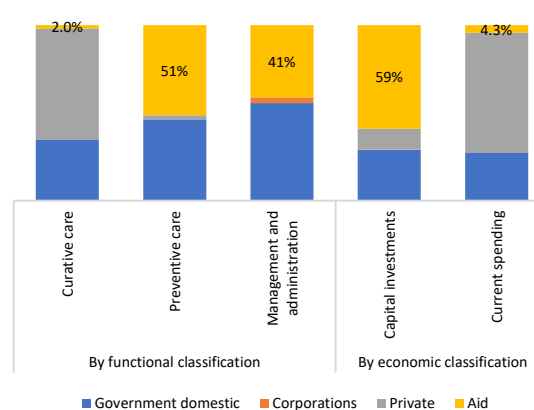
Foreign aid is focused on HIV/AIDS and tuberculosis, and general technical assistance to the government. About 60 percent of capital spending in health came from development partners in 2018. Corresponding to the large aid share of The Global Fund to Fight AIDS, Tuberculosis and Malaria, infectious diseases are the health condition with the highest amount of development partner funding (Figure 6.25).[49] A quarter of development partner funds for health are not tied to a specific health condition, while about a sixth is dedicated to malnutrition and NCDs. Functionally, aid for health in Tajikistan is focused on prevention, with a share of 45 percent, followed by curative care which accounts for about a third, and technical support for management and administration of the health system on which less than a sixth of aid is spent. In terms of economic classification, 30 percent of aid-financed investments into infrastructure and equipment in 2017. Figure 6.26 shows that external aid played a particularly important role in Tajikistan's 2018 overall health care financing mix for prevention, health system management and administration, and capital investments, where it was responsible for a striking 60 percent of total health expenditure.

Preliminary data suggest that the COVID-19 pandemic has led to a steep increase in development partner funding for health. As of October 2020, it was estimated that development partners had committed roughly US$60 million in additional health sector aid for the response to the pandemic—medicines, personal protective equipment, ventilators, test-kits, population awareness and cash-support. It remains to be seen how the midterm trajectory of foreign aid will respond to the looming pressures on public budgets in development partner countries.

PUBLIC HEALTH CARE EXPENDITURE

Funding sources

Government revenue and patient payments likely contribute about equal shares to the funding of public health care services. Formal copayments still play a small role. Public

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[49] Of donor infectious disease funding, 61 percent went to HIV/AIDS, 25 percent to Tuberculosis, and 15 percent to vaccination-related activities.

health care in Tajikistan is financed from formal and informal payments made out-of-pocket by households, general taxes and other public levies, as well as development partner contributions. User fees are the only domestic public revenue source specifically collected for health, as no earmarked health taxes or premium-based social health insurance exist. While no precise data are available, user fee incomes can be assumed to account for a large share of public health care provider revenue. Figure 6.27 shows the sources of health care service provider income, as of 2018, from Tajikistan's National Health Accounts (NHA).[50] User fees are responsible for about half of provider revenues, but formal fees—those collected as copayments under the Decree 600 and BBP scheme—represent only a small share of facility financing. For ambulatory care facilities, they account for seven percent of user fee income and 3 percent. For inpatient care facilities, the respective shares are 15 percent and 8 percent. Hence, a decade after they were first introduced, Decree 600 and the BBP have made little progress toward their stated goals of formalizing patient payments.

Figure 6.27: Sources of Financing of Hospital and Ambulatory Care in Tajikistan, 2018
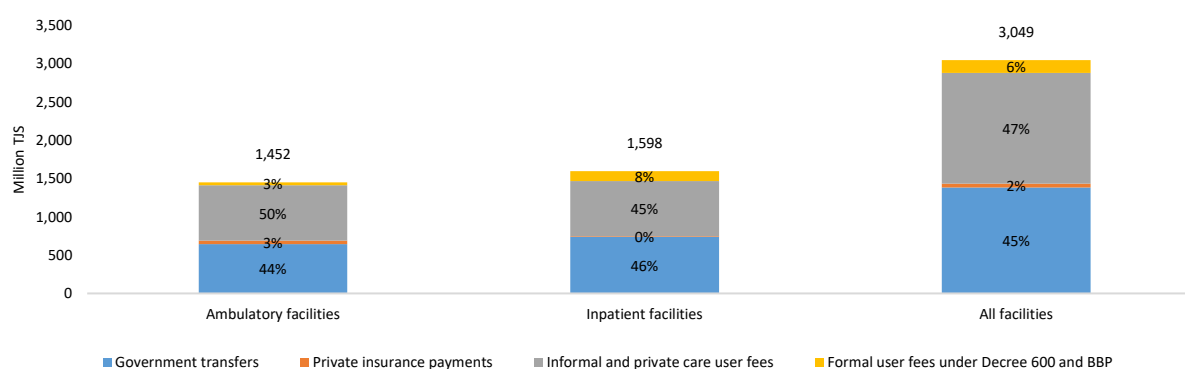
Source: Own calculation based on 2018 Tajikistan National Health Accounts (NHA).
Notes: Inpatient facilities comprise hospitals and long-term care facilities whereas ambulatory facilities include curative and preventive care providers.

For a low-income country, Tajikistan receives relatively little on-budget development partner support in terms of US$ value and share in total public health care spending. On-budget development partner financing for health steadily increased in US$ terms and in its share of public health spending over the past years, but in 2018 saw drops to US$1.5 and 8.5 percent (Figure 6.28 and Figure 6.29). For a low-income country with a GDP close to the lower-middle income country threshold, Tajikistan receives relatively little development partner on-budget support—less than half in US$ than the Kyrgyz Republic with its higher per capita GDP, and less than a quarter of the low-income country average.

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[50] NHA revenue source data is not broken down by public and private providers, but because the latter account for only a small fraction of health services in Tajikistan, the figure likely is a reasonable approximation of the funding sources of public health care facilities.

Figure 6.28: Trends in Development Partner On-Budget Funding in Constant US$ in Central Asia, 2008–2018
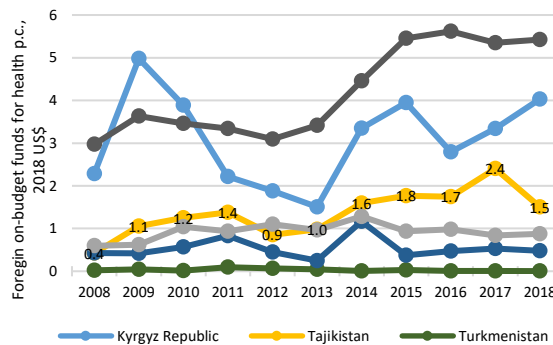
Figure 6.29: Trends in Development Partner On-Budget Funding as a Share of Total Government Health Spending in Central Asia, 2008–2018
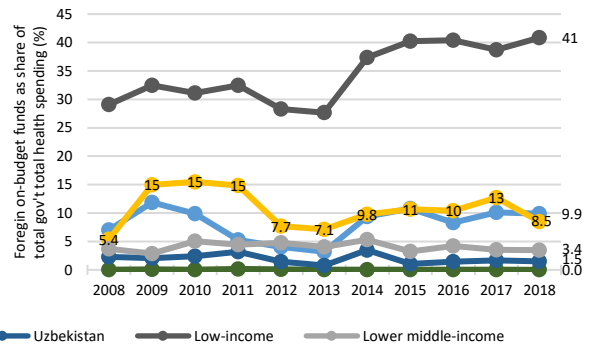
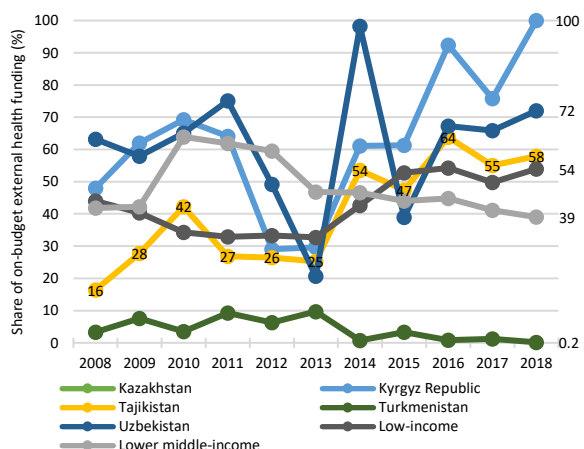Kyrgyz Republic — Tajikistan — Turkmenistan — Uzbekistan — Low-income — Lower middle-income

Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

Domestic government funding for health in Tajikistan amounted to just US$16 per capita in 2018, by far the lowest in Central Asia. In 2018, domestic government funding for health amounted to TJS148, or US$16 per capita, more than double its 2008 levels, but still far below levels of other countries in the region and the lower-middle-income country average (Figure 6.30, Figure 6.31 and Figure 6.31).

Figure 6.30: Government Domestic Funding for Health Per Capita in Constant TJS 2008–2018
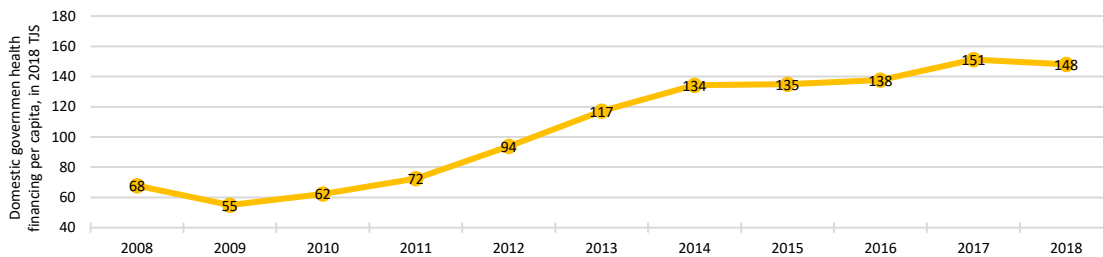
Source: Global Health Expenditure Database (GHED).

Figure 6.31: Trends in Government Domestic Funding Per Capita in Constant International $ in Central Asia, 2008–2018
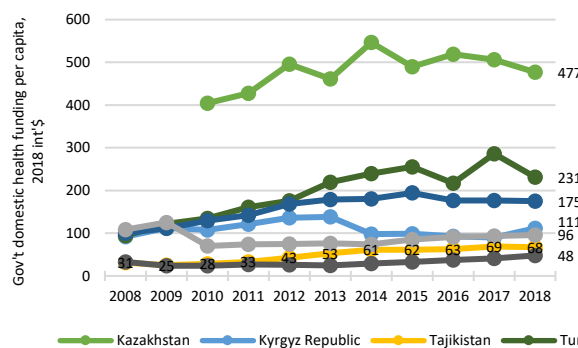
Figure 6.32: Trends in Government Domestic Funding Per Capita in Constant US$ in Central Asia, 2008–2018
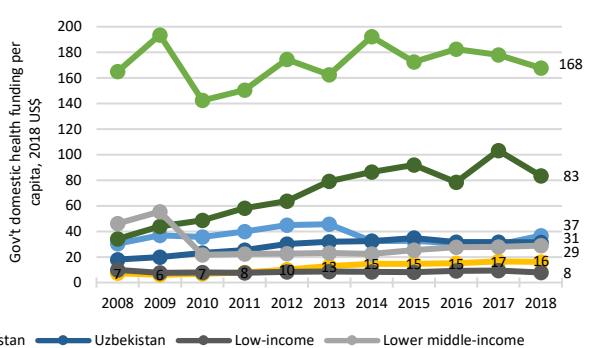
Kazakhstan — Kyrgyz Republic — Tajikistan — Turkmenistan — Uzbekistan — Low-income — Lower middle-income

The share of domestic government financing in total health expenditures is low by international comparison. By international comparison, domestic government financing played a small role in terms of its total health expenditures share, which, at 27 percent in 2018, was the second lowest in the region (Figure 6.33). As a result of Tajikistan's high overall health spending relative to its income, the public health funding share in GDP, however, is relatively high, at 2 percent, but remains far below the recommended 5 percent threshold (McIntyre, Meheus, and Røttingen 2017) (Figure 6.34).

Figure 6.33: Trends in Domestic Government Funding for Health as a Share of Current Health Expenditure (CHE) in Central Asia, 2008–2018
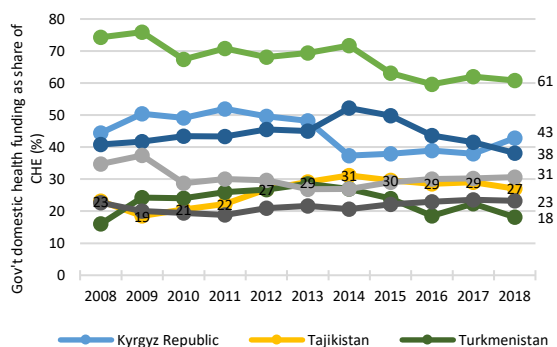
Figure 6.34: Trends in Domestic Government Funding for Health as a Share of GDP in Central Asia, 2008–2018
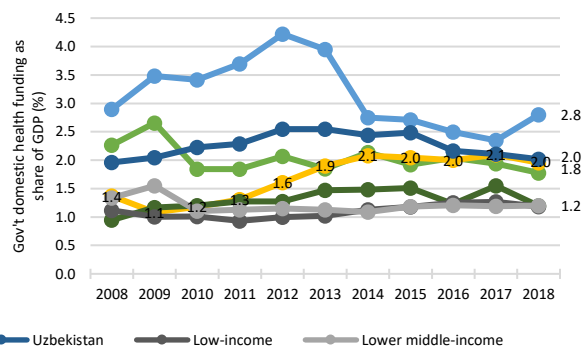
Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

The Tajik government has consistently placed a lower priority on health: The country has the smallest share of funding for health care in total government spending in the Central Asia region which, at 7 percent, falls far short of the recommended 15 percent. The Government of the Republic of Tajikistan gives relatively low priority to health in its sectoral budget allocation. At 6.8 percent in 2018, the health spending share in total public spending in Tajikistan was the lowest in the region, 30 percent lower than the low-income country average of 9.7 percent, and substantively below the 15 percent stipulated in the 2000 Abuja declaration (McIntyre, Kutzin, and Organization 2016) (Figure 6.35). Health has also consistently been one of the sectors with the least funding (Figure 6.36). The health sector's funding share has, however, remained relatively stable over a period when other public spending such as on social security and welfare, and housing and communal services have taken deep cuts to finance the increase in spending on the country's energy infrastructure (Figure 6.36). This resilience of public health care financing is encouraging, but additional prioritization of government funds toward health would be beneficial given the sector's current low spending share.

Figure 6.35: Public Funding for Health as a Share of Total Government Expenditures in Central Asia, 2013–2018
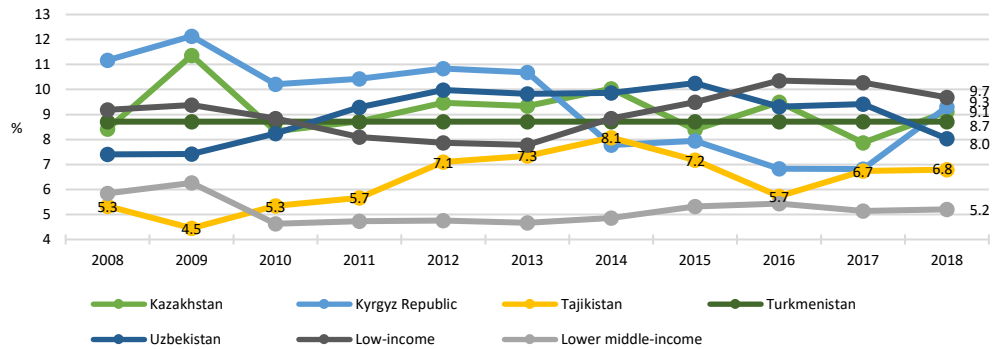
Source: Global Health Expenditure Database (GHED).

Figure 6.36: Sectoral Government Expenditures as a Share of Total Government Expenditures in Tajikistan, 2013–2018

Source: Ministry of Finance of the Republic of Tajikistan.

Expenditure levels

Budget execution in Tajikistan is high. MoF data on the subnational and rayon budgets which constitute 80 percent of overall public health care spending in Tajikistan show that in 2018, year-end expenditures amounted to 97 percent of the midyear adjusted budget (Figure 6.37) and 104 percent of the budget planned at the beginning of the fiscal year. The high average execution rate does not mask substantial divergences across localities, as the median execution rate of the planned budget across all oblasts and rayons was 97 percent.

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Figure 6.37: Execution of Adjusted Subnational Health Care Budgets in Tajikistan, 2018

Figure 6.38: Government Health Expenditures per capita in Tajikistan in Constant TJS, 2008–2025
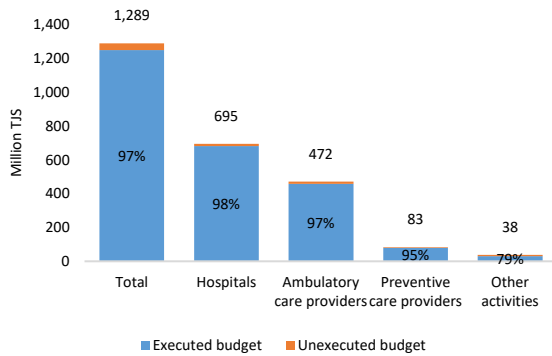
Source: Ministry of Finance of the Republic of Tajikistan.
Notes: 1 TJS = 0.11 US$, 0.46 international $.
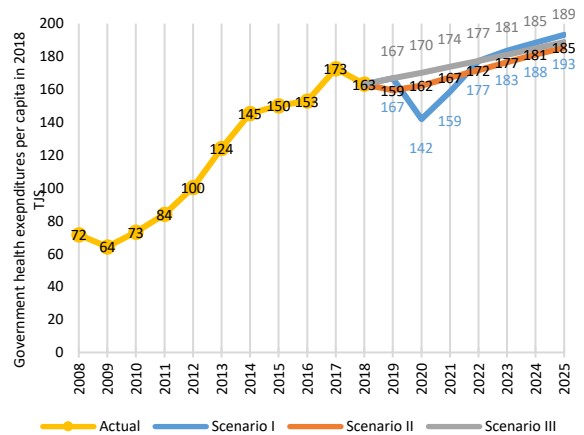
Source: 2008–2018 data from Global Health Expenditure Database (GHED), 2019–2025 projection are author's calculation using public health expenditure data from GHED and macroeconomic projections from IMF October 2020 World Economic Outlook.

Government health expenditures per capita have grown rapidly over the past decade but still fall far short of levels needed to provide a basic benefit package to a large part of the population. After rapid growth at an average annual rate of 8.6 percent since 2008, government health spending per capita from external and domestic sources combined amounted to TJS163, 75 international dollar and US$18 (Figure 6.38, Figure 6.39 and Figure 6.40). Therewith, Tajikistan ranks behind all other countries in the region, at par with the low-income country average, and far below the estimated US$40–79 per capita needed to provide a basic benefit package to 80 percent of its population (Watkins et al. 2020).

Figure 6.39: Trends in Per Capita Government and Social Health Insurance Expenditures in Central Asia in Constant International $, 2008–2018
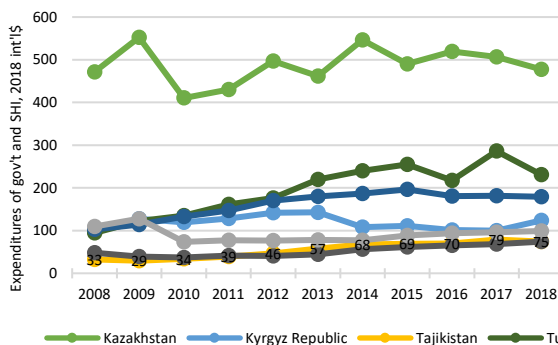
Figure 6.40: Trends in Per Capita Government and Social Health Insurance Expenditures in Central Asia in US$, 2008–2018
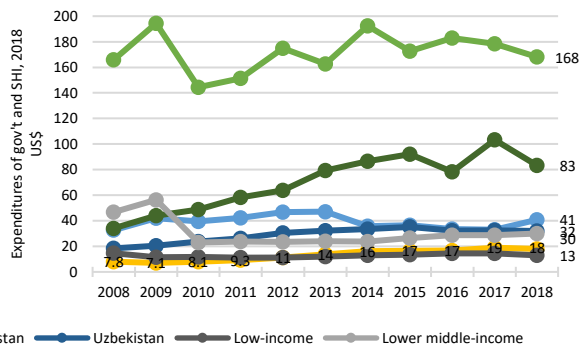
Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.

Government health expenditure projections for the 2019–2025 period are provided for three scenarios. Projections for per capita public health expenditures for 2019–2025 are provided for three scenarios which use GDP, general government expenditures and net lending

estimates for the 2008–2025 period from the October 2020 IMF World Economic Outlook, and health expenditure data for 2008–2018 from the WHO Global Health Expenditure Database. For scenario I, the elasticities of per capita public health spending regarding GDP per capita, the government expenditure share of GDP, and the net-lending share of GDP are first fitted with a linear regression model using the 2008–2018 data. Subsequently, the projected 2019–2025 IMF data are plugged into the model to forecast per capita health spending. For scenario II, it is assumed that the health sector share in general government spending will remain at the same level as in 2018, while for scenario III, the assumption is that public health expenditures will grow at the average rate they grew between 2008 and 2018.

There is a large degree of uncertainty about the impact of the COVID-19 pandemic on public health expenditures. Under scenario I, public health expenditures would contract by about 15 percent in 2020, pick up substantially in 2021 but remain below their 2019 levels, which they would eventually reach again in 2022 (Figure 6.38). In scenario II, public health spending would slightly increase, by about 2 percent, in 2020. This increase is a result of the estimated increase in general government spending exceeding the simultaneous contraction in GDP. Public health care spending per capita is forecasted to also rise by about two percent if its average growth rate of the past is used to project future levels in scenario III. Given that COVID-19 is a shock that underscores the relevance of the health sector, and that governments rely on its responsiveness in coping with it, it is unlikely even under GDP shrinkage and increased public debt that public health spending will be drastically cut. Instead, it is realistic to assume that the general government spending and GDP shares of public health care spending will increase, possibly with an increase in absolute per capita public health spending like in scenarios II and III. In fact, preliminary public health care spending data suggest a steep, short-term funding increase.

Despite increases over the past decade, the shares of government health spending in GDP and in current health spending remain far below levels needed to achieve effective health coverage for the Tajik population. Despite its low level, public health spending makes up a relatively large share of GDP in Tajikistan compared to other countries in the region and countries of similar income levels (Figure 6.41). Still, nine of 27 low-income and 23 of 46 lower middle-income countries, including neighboring Kyrgyz republic used larger shares of their income to finance public health care, and at 2.2 percent, Tajikistan's public health spending share in GDP remained far below the 5 percent estimated to be the minimum to achieve substantive progress toward UHC (McIntyre, Meheus, and Røttingen 2017).[51] Moreover, despite an increase over the past decade, the share of public health care spending in current health expenditure remains low at 30 percent (2018) compared to the region as well the average for low-income countries (Figure 6.42). To achieve effective public coverage for the Tajik population, government health expenditures would need to increase substantively. This is a challenging, but achievable goal, as 52 of 73 low- and lower-middle-income countries currently have higher shares of public health care spending in current health expenditure, with the 75th quintile across these countries standing at 57 percent.[52]

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[51] McIntyre, Meheus, and Røttingen (2017) derive the 5 percent minimum threshold from the correlation of the government health expenditure share in GDP with proxy indicators of financial protection and access to quality health care, as well as from country case studies estimating the resource requirements for a universal health system.

[52] In 2018, 16 of 27 low-income and of 36 of 46 lower-middle-income countries had higher public sector total health expenditures shares. The public spending share at the 75th percentile of low-income countries was 45 percent and that of lower-middle-income countries 64 percent as of 2018.

Figure 6.41: Trends in Expenditures of Government and Social Health Insurance as a Share of GDP in Central Asia, 2008–2018
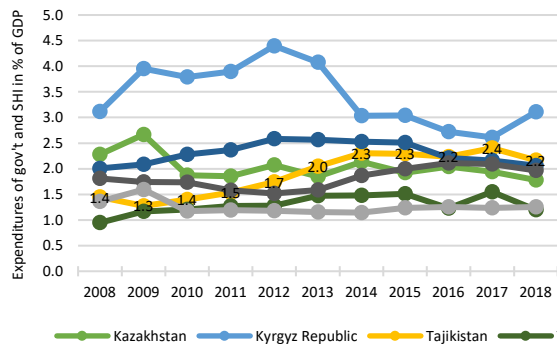
Figure 6.42: Trends in Expenditures of Government and Social Health Insurance as a Share of Current Health Expenditure (CHE) in Central Asia, 2008–2018
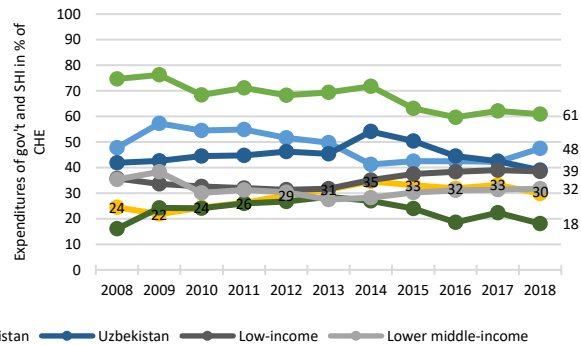
Source: Global Health Expenditure Database (GHED), country income group trends are from own calculations of population weighted averages.
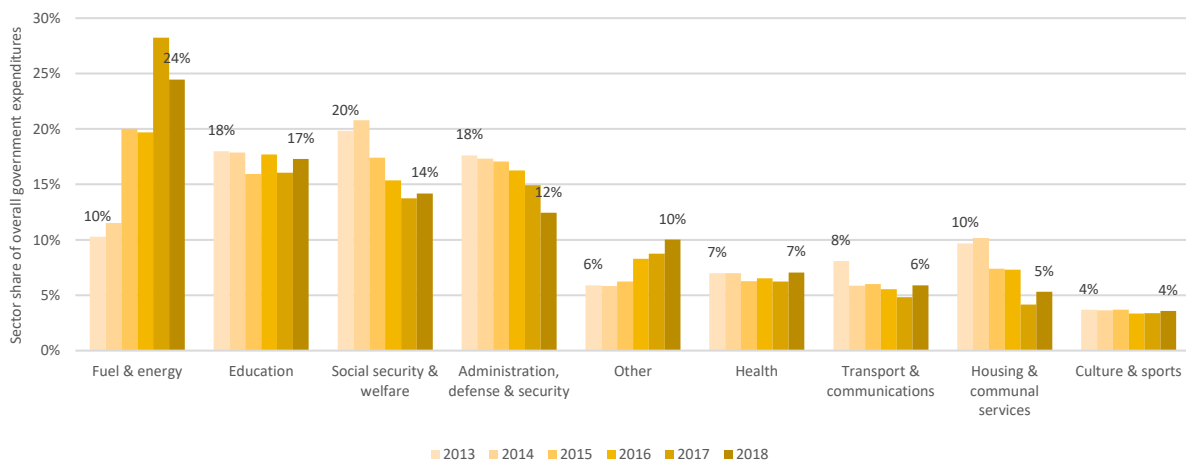
About 80 percent of Tajikistan's public health care budget is executed by subnational administrations. As previously mentioned, the large majority of public health care funding in Tajikistan, 78 percent as of 2018, is executed by subnational authorities. The share executed by the national (republican) level—predominantly MoHSP—has increased in recent years, from 13 percent in 2013 to 22 percent in 2018 (Figure 6.43).

Figure 6.43: Trend in Government Health Expenditures in Tajikistan by Administrative Tier in Constant TJS (Millions), 2013–2018
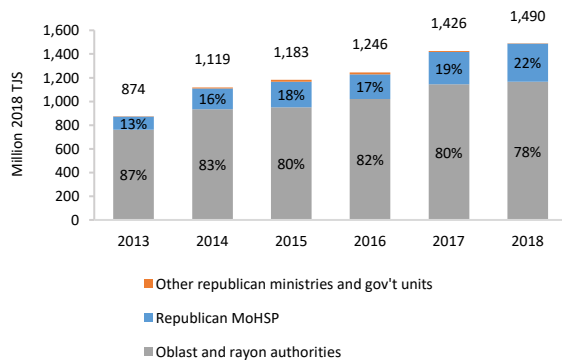
Figure 6.44: Subnational Government per capita Health Expenditures by Region in 2019 TJS, 2019
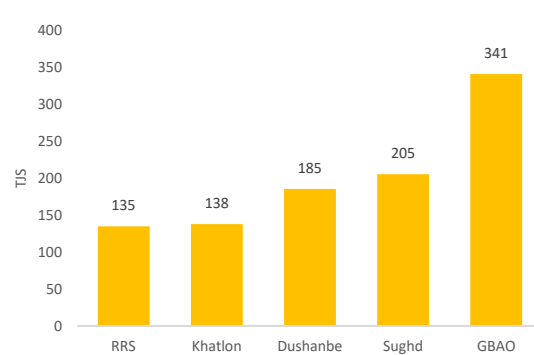
Source: Tajikistan National Health Accounts (NHA).
Notes: 1 TJS = 0.11 US$, 0.46 international $.

Source: Own calculations based on data from MoF.
Notes: 1 TJS = 0.10 US$, 0.43 international $.

There are substantial regional inequalities in per capita government health care spending. Figure 6.44 shows the regional distribution of subnational health care expenditures for Tajikistan's five first level administrative regions. For each region, total subnational government health expenditure was computed by aggregating rayon, city and oblast level spending. Because the RRS do not have oblast-level health care institutions, and RRS residents therefore have access to those of Dushanbe, oblast per capita spending for the two regions was computed by dividing Dushanbe's oblast level spending by the combined Dushanbe and RRS population. The very high per capita expenditures in GBAO, which is home to only 3 percent of Tajiks, reflects additional funding to compensate for the oblast's low population density and challenging

geography. In Dushanbe and Sughd, per capita subnational spending is 40–50 percent higher than in the RRS and Khatlon. In what follows, it is demonstrated that these inequalities are primarily driven by the inequitable historic distribution of health care infrastructure and health care workers, rather than differing levels of health care need. Importantly, in line with findings from an earlier World Bank expenditure review, we find no correlation of public health care spending and regional wealth measured by rayon poverty rates once hospital bed and health workers densities which are determined at the central level are accounted for (World Bank 2008).

Functional allocation

Half of Tajikistan's government health care budget is spent on inpatient services, and 36 percent on primary care. The functional distribution of health spending in Tajikistan has been stable over the 2013–2018 period. The country consistently spent just under half of its public health resources on inpatient care and an additional 8 percent on specialist outpatient care (Figure 6.45). Primary health care (PHC), defined as the sum of general outpatient care and prevention (World Health Organization 2019a), accounts for just under 40 percent. Further breakdown by republican and subnational levels of government shows that Tajikistan is close to reaching its goal of spending 40 percent or more of subnational budgets on PHC (Egamov, Bogodyrova, and Akkazieva 2014) (Figure 6.46). With its 36 percent PHC share in government spending, Tajikistan falls into the mid-range of former Soviet countries, which are led by the Kyrgyz Republic's 69 percent (Figure 6.47). The high PHC spending share in the Kyrgyz Republic is reflective of the country's various initiatives over the past decade to strengthen PHC, which include the introduction of an outpatient drug package that is available either free of charge for vulnerable population groups, or at subsidized prices for members of its single-payer social health insurance scheme (Nguyen and Strizrep 2019).

Figure 6.45: Trend in Functional Classification of Public Health Spending in Tajikistan, 2014–2018
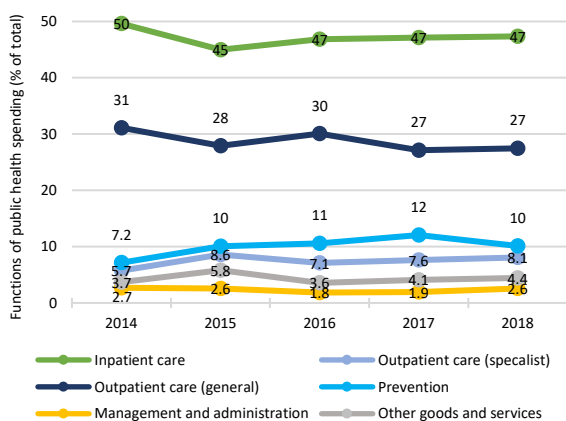
Figure 6.46: Trends in Subnational Government per capita Health Expenditures in Tajikistan's Regions inConstant TJS, 2013–2017
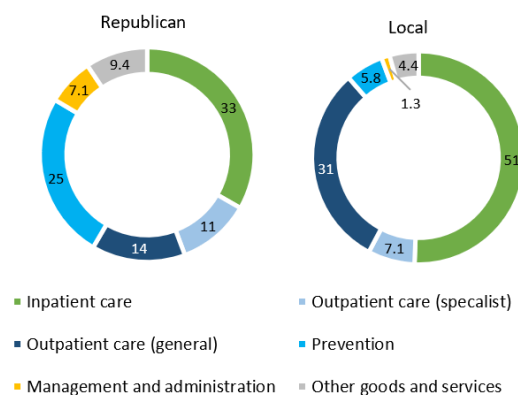
Source: Author calculations based on Tajikistan National Health Accounts (NHA).

Absolute PHC spending, at about US$6.40 per capita, however, falls far short of levels needed to appropriately cover the population. In absolute terms, Tajikistan's public PHC spending of about US$6.44 per capita continues to remain below the US$65 estimated to be required to provide effective PHC (Stenberg et al. 2019). The underfunding of highly cost-effective PHC interventions is problematic not only because it is harmful to population health but

also from an efficiency perspective, as effective PHC reduces the need for costly specialist and inpatient care, including for the NCDs that are increasingly prevalent in Tajikistan (Guanais and Macinko 2009, Rosano et al. 2013, Van Loenen et al. 2016).

Figure 6.47: Share of Domestic Government Health Expenditure Spent on Primary Health Care in Selected Former Soviet Countries, 2018
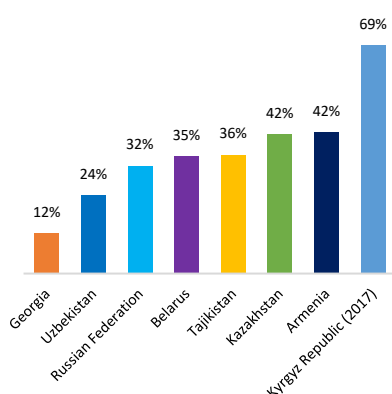
Figure 6.48: Domestic Government Shares in Current Health Expenditure by Function in Central Asia, 2018
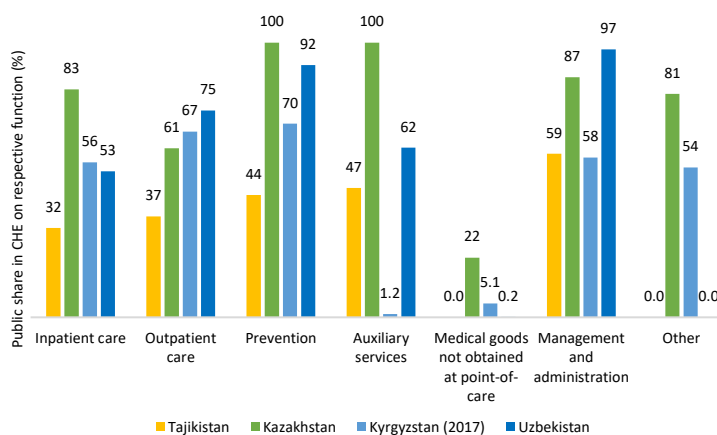
Source: Own calculations based on Tajikistan National Health Accounts (NHA).

Government funding accounts for only about a third of inpatient and outpatient care spending in Tajikistan. Figure 6.48 gives an indication of how the public sector involvement in different functional areas of the health system in Tajikistan compares to that in other countries. Despite the government spending just under half of its public health care budget on inpatient care, this accounts for only one-third of all inpatient spending on inpatient care in Tajikistan comes from the public sector, by far the lowest share in the region. A similar picture emerges for outpatient services and prevention where Tajikistan is the only country in Central Asia where less than half of all current spending is incurred by the public sector.

T he number of hospitals beds per 1,000 population is high in Tajikistan, with large regional disparities within the country. The high share of public health care spending taken up by inpatient care in Tajikistan is reflected in a relatively high number of hospital beds per capita, a typical pattern for former Soviet countries that is inherited from the hospital-centered Semashko model. By 2017, Tajikistan's bed per 1,000 population ratio had dropped to 4.5, a reduction of 60 percent from its 1992 high of 11.2 (Figure 6.49, left). This remains the second highest in the region, about four times the average for low- and lower-middle income country.. It is also 25 percent above the rate of 3.6 suggested in the 2011 facility masterplan that was developed jointly by the Government of the Republic of Tajikistan and the World Bank.[53] There are also large regional differences in bed-to-population ratios within Tajikistan. The high ratio in Dushanbe is in part explained by republican tertiary facilities being located there to which all citizens have access, and GBAO's high ratio is likely due to its extremely low population density. The low ratio in RRS is in part due to the lack of oblast hospitals in the RRS. Because RRS residents can therefore access oblast hospitals in Dushanbe, Figure 6.49 also includes combined Dushanbe and RRS averages. The bed-to-population ratio of the combined Dushanbe and RRS regions is more

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[53] Strategic plan for rationalization of health facilities of the Republic of Tajikistan for the period 2011-2020, approved by Government RT decree #149 from April 1, 2011.

similar to that of Khatlon, but both are 30–40 percent lower than that of Sughd. These regional discrepancies in bed-to-population ratios are in line with the regional public spending patterns depicted in Figure 6.44, underscoring that in Tajikistan's input-based health financing system, funds follow the historic distribution of the country's health infrastructure.

Figure 6.49: Indicators of Hospital Efficiency in Central Asia and the European Union, 2017
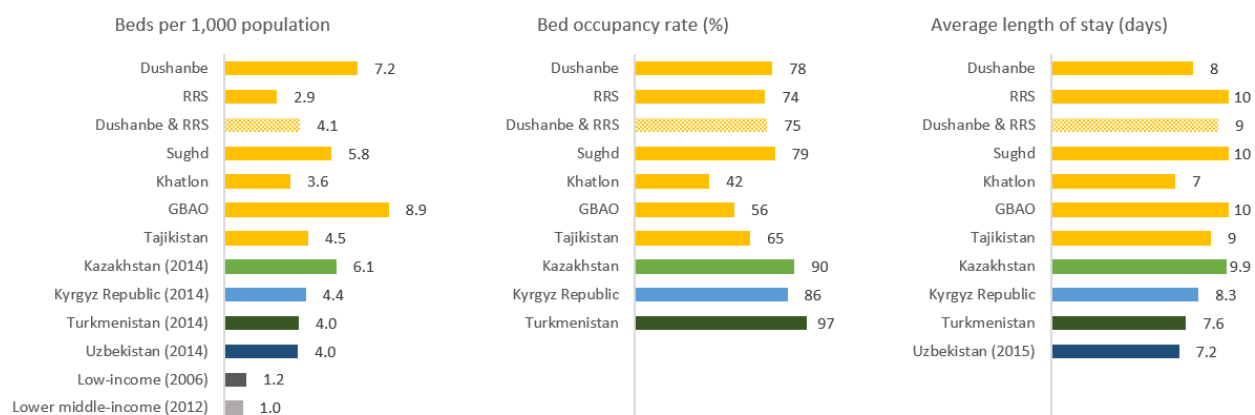
Sources: Data for Tajikistan and its regions for 2017 from District Health Information System (DHIS). Data for other Central Asian countries from WHO HfA database, and data for low- and lower-middle income country averages from World Development Indicators (WDI).

On average, only two-thirds of hospital beds in Tajikistan are filled, the lowest rate in the region. As the number of beds are a key determinant of health facility budget assignment in Tajikistan, it is all the more important for efficiency that beds are filled. Bed occupancy rate data—the proportion of a year that all hospital beds are in use—however, suggest otherwise. Tajikistan's average bed occupancy rate is 65 percent, well below other countries in the region and the 80 percent target stipulated in the government's latest facility masterplan[54] (Figure 6.49, middle). Regional differences in underutilization within Tajikistan reveal an interesting pattern. Bed occupancy rates are high in more affluent Dushanbe and Sughd despite their high bed-to-population ratios. By contrast, in Khatlon, the poorest region of the country which also has the second-lowest bed-to-population ratio, the bed occupancy rate is less than 50 percent, perhaps an indication of a larger share of people forgoing inpatient care because they cannot afford formal user fees and/or informal payments.

The average length of hospital stays is high by international comparison. Another commonly used indicator of hospital efficiency is the average length of stay, measured as the average number of days an admitted patient stays in hospital before discharge or death. The indicator is grounded in the assumption that patients are sometimes kept in the hospital longer than clinically indicated, which may be due to cultural expectations or because providers have financial incentives to extend stays. Both factors are likely at play in Tajikistan, as a legacy of accustomed care delivery patterns under the Semashko model, and because provider income from formal and informal patient payments increases the longer patients are kept in the facility (Glonti 2015).

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[54] Strategic plan for rationalization of health facilities of the Republic of Tajikistan for the period 2011–2020, approved by Government RT decree #149 from April 1, 2011.

Consequently, the average length of stay for Tajikistan, at nine days, is second only to that of Kazakhstan in the Central Asia region, again indicating inefficiencies (Figure 6.49, right).

A composite measure of relative hospital efficiency classifies Tajikistan's hospital sector as inefficient, with the country ranking last in the Central Asia region. Figure 6.50 shows a "Pabón Lasso chart," which provides a summary picture of relative hospital efficiency across countries in the WHO-EURO region (Pabón Lasso 1986). The graph also shows the relative efficiency of hospitals in Tajikistan's five regions. We again include data on a combined Dushanbe-RRS region, as RRS residents have access to Dushanbe oblast hospitals. As inputs, the chart uses countries' bed occupancy rates and average length of stays, as well as their number of admissions per bed in a year, or bed turnover ratio. As by definition, any of the three measures can be expressed as a mathematical function of the other two, $(Bed\ occupancy\ rate \cdot 365)/Bed\ turnover\ ratio = Average\ length\ of\ stay)$, they can be displayed jointly in a two-dimensional chart. The chart area is divided into four sectors which indicate efficiency relative to a reference country or country group. Because of their shared health system history, we use the countries of the Commonwealth of Independent States (CIS) as a country group reference point (dashed lines).[55] Sector 1 includes countries with relatively inefficient hospital sector by way of having both a lower bed occupancy rate and a higher average length of stay than the reference country group. Relative efficiency measures are ambiguous for countries in Sector 2, where both the bed occupancy rate and average length of stay are lower than in the reference country group, and in Sector 4 where both are higher. Sector 3 includes the relatively efficient countries with high bed occupancy rates and low average lengths of stay. The further to the bottom-left corner of the chart a country is located, the more inefficient its hospital sector. The Pabón Lasso chart shown below underscores the findings of the partial analysis above: Of the four Central Asian countries in this analysis, Tajikistan is the only one in the relative inefficiency-indicating Sector 1 compared to the CIS country average.

All Tajik regions have relatively inefficient hospital sectors, and hospital efficiency is lowest in GBAO and Khatlon. Within Tajikistan, Sughd is the only region that falls slightly outside the sector of relative inefficiency when compared with the CIS country average. All other regions are relatively inefficient compared to the CIS country averages. The discrepancies in hospital inefficiencies across regions are large, with GBAO and Khatlon with their low bed occupancy rates showing much lower efficiency than Sughd, Dushanbe, the RRS, and the combined Dushanbe-RRS region.

Figure 6.50: Pabón Lasso Chart for WHO-EURO Countries Using Latest Available Data

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[55] Averages are simple cross-country means that are not population-weighted.
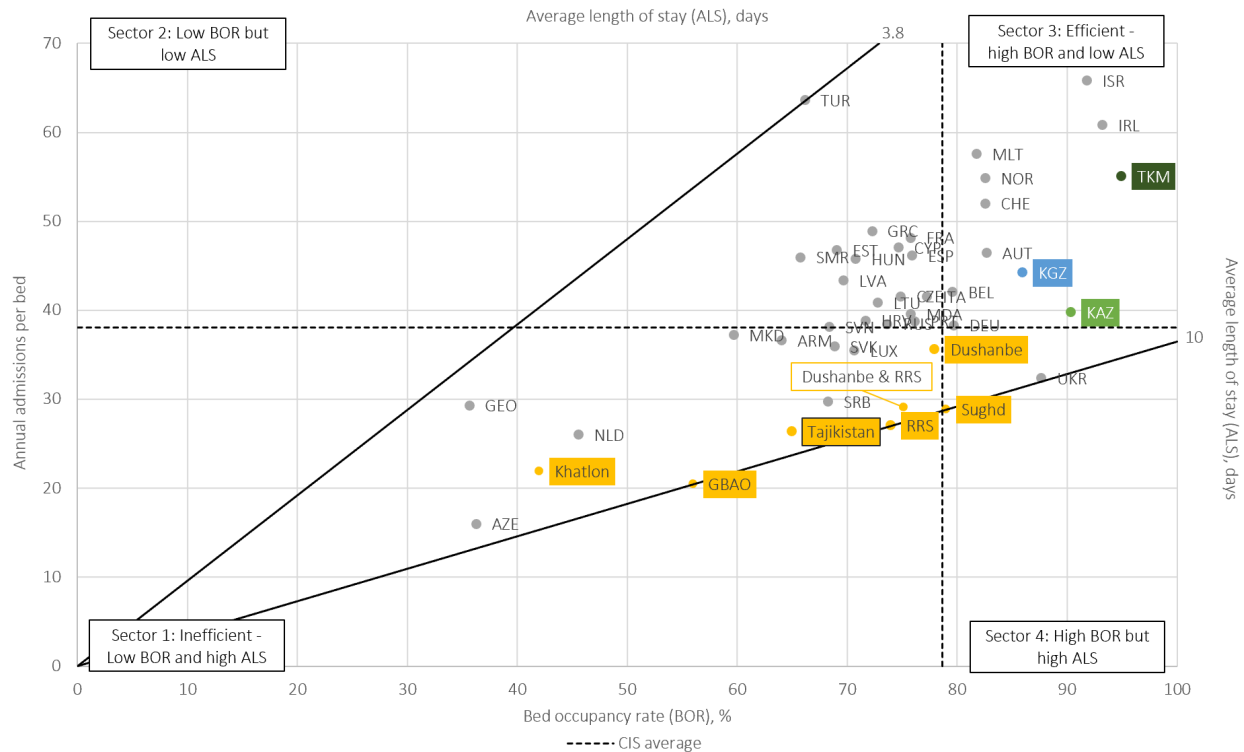
Source: Own analysis using data for Tajikistan and its regions from 2017 DHIS and for other WHO-EURO countries from WHO Health For all (HfA) database where no data are older than 2010.
Notes: KAZ = Kazakhstan, KGZ = Kyrgyz Republic, TKM = Turkmenistan. ALS = Average length of stay, BOR = Bed occupancy rate.

Relative efficiency compared to other countries does not preclude substantial inefficiencies in a country's hospital sector, nor that efficient use of hospital financing is an ineffective use of health sector financing. An important caveat of the comparative efficiency analyses in Figure 6.49 and Figure 6.50 is that their validity hinges on the assumption that the share of hospital admissions that are clinically necessary is the same across all included countries. For example, if the exceptionally high bed occupancy rates in the other Central Asian countries are largely reflective of a higher incidence of clinically unnecessary admissions than in the other WHO-EURO countries, their relative efficiency would be overstated. Data from OECD countries indicate that the variation in avoidable hospitalizations across countries can be substantial—for instance, age standardized rates of hospitalization for asthma and chronic obstructive pulmonary disease vary between 58 per 100,000 in Japan and 428 per 100,000 in Hungary (OECD 2019). A second important caveat relates to the relative nature of the efficiency assessment. If avoidable hospitalizations are common in all countries, a positioning as relative efficient misleads, as it masks substantial absolute inefficiency. Finally, high technical efficiency in the hospital sector does not preclude poor allocative efficiency of health sector resources overall, for example, if secondary care continues to dominate over primary care.

Tajikistan operates unusually large numbers of small subnational hospitals, indicating potential for efficiency-enhancing consolidation. Tajikistan's relatively large number of hospital beds are distributed across a large number of hospitals. According to internationally comparable data from 2013, there were 4.7 hospitals per 100,000 population in Tajikistan—a third more than in Kazakhstan and 80 percent more than in the Kyrgyz Republic (Figure 6.51). The high number of hospitals in Tajikistan compared to its neighbors is driven by a large number of

small, unspecialized rural hospitals. By contrast, Tajikistan has far fewer specialized hospitals per capita.

Figure 6.51: Hospitals per 100,000 Population in Tajikistan, Kazakhstan, and the Kyrgyz Republic by Type, 2013
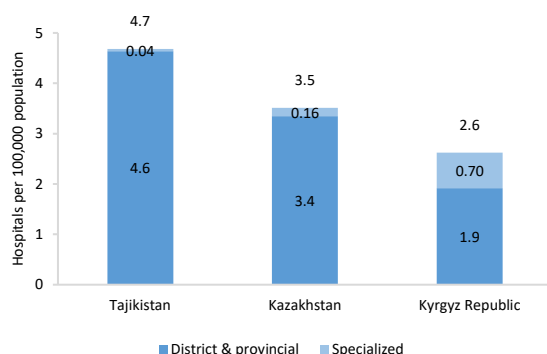
Figure 6.52: Health Facilities per 100,000 Population in Tajikistan, Kazakhstan, and the Kyrgyz Republic by Type, 2013
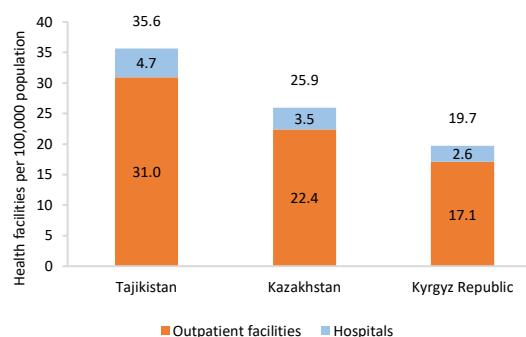
Source: WHO Global Health Observatory data repository.

Similarly, the number of outpatient facilities in Tajikistan is substantially higher than among its Central Asian neighbors. A very similar picture emerges for outpatient facilities, where the per capita count in Tajikistan is again almost 40 percent higher than in Kazakhstan and 80 percent higher than in the Kyrgyz Republic (Figure 6.52). Only to the degree that the much higher facility density in Tajikistan reflects genuine differences in geography and population density—as in Tajikistan's GBAO province—do they represent an efficient use of resources. However, given that the population density is far higher in Tajikistan than in Kazakhstan and the Kyrgyz Republic (Figure 2.3), which also have similar or higher rates of outpatient and inpatient care utilization rates, it is likely that many of the smaller Tajik inpatient and outpatient facilities could be consolidated with gains from increased economies of scale without substantively reducing geographic access for the population.

Economic allocation

Disaggregation of government health care expenditures by economic classification reveals that 80 percent is spent on salaries, with spending shares below 5 percent for medical goods and capital investments. There is no single perfect input mix for health care systems that can be applied to all countries, as the right composition of labor, medical goods, and capital varies by epidemiological profile, geography, societal preferences and prices. But comparisons with other countries may provide orientation. A review of health sector public expenditure reviews by Gaudin and Yazbeck (2014), for example, finds that salary spending shares above 50–60 percent are typically deemed excessive, and that spending less than 30–40 percent on medical goods is considered too little, as is spending less than 5 percent on capital. Figure 6.53 shows that the "economic allocation" of Tajikistan's government health spending is far off these input shares: Every year since 2013, health worker salaries have consumed more than 80 percent of government funds for health, whereas spending on medical goods has been responsible for just 4 percent and capital investments for only about 3 percent. The unusually high salary share reflects the combination of an overall lack of resources and the salary budget line being "protected" in the budgeting process, that is, salaries are paid before spending on other

items like medical goods can be considered. It also is the result of the absence of effective public coverage of outpatient drugs, which are currently mainly paid for directly by households.

Figure 6.53: Economic Classification of Public Health Care Expenditure in Tajikistan
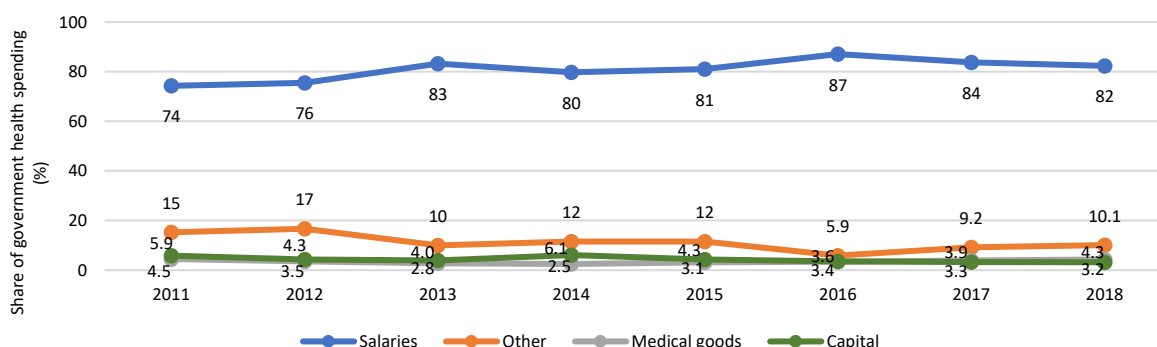
Source: Tajikistan Joint Annual Review 2019.

Human resources

Despite a great increase in health workers salaries over the past decade, they remain low in absolute levels. The 2007–2013 period saw large increases in the salaries of government health workers of all cadres, which quadrupled in real terms for physicians and mid-level staff, and tripled for lower level staff (Figure 6.54). Between 2013 and 2018, there was a modest further increase in real TJS terms of around 10 percent for physicians and mid-level staff, and a higher one for lower level staff, at 30 percent. At TJS460 for lower level, TJS672 for mid-level staff, and TJS1,090 for physicians, the 2018 salary levels amounted to about two-, three-, and five-fold the national poverty line of TJS198 per capita per month. The depreciation of the TJS due to the recession in Russia has, however, led to a stagnation in the international dollar value of health worker salaries. As of 2018, the monthly salary of the average physician stood at 497 international $, that of the average mid-level staff at 306 international $, and that of the average entry-level staff at 210 international $. The low salaries are key contributors to the high prevalence of informal payments and outmigration of health care workers (Dabalen and Wane 2008, Bandaev, Kurbonova, and Samuilova 2018).

Figure 6.54: Trend in Monthly Average Health Worker Salaries in Tajikistan, by Cadre
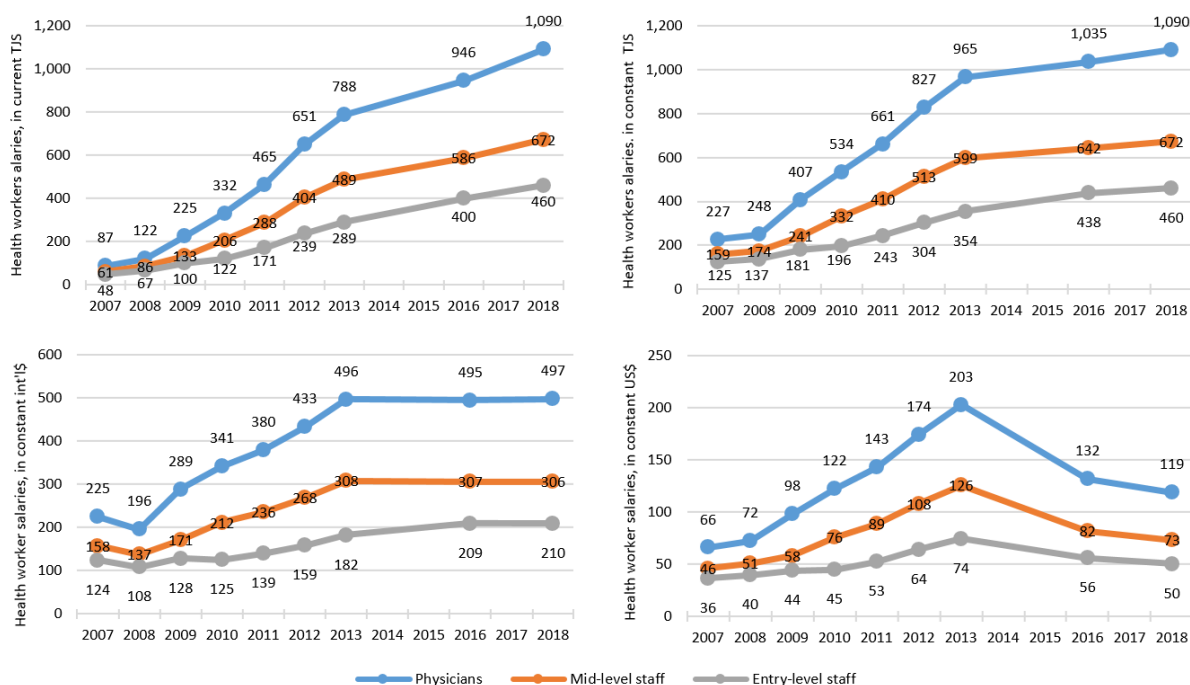
Source: Ministry of Health and Social Protection.
Notes: When salaries are expressed in constant currency units, they refer to 2018 prices.

Tajikistan's health worker density is high for its income level, and further research into the labor market is needed to assess the potential for consolidation. Like other former Soviet countries, Tajikistan employs a relatively large number of clinical and support staff in its public health care system. The number of physicians, nurses and midwives per 10,000 population increased by about 20 percent between 2011 and 2017, when it stood at just over 73. This is a low rate compared to its neighbors but very high for Tajikistan's income level, exceeding the upper-middle-income country average (Figure 6.55 and Figure 6.56). The national health worker densities mask starkly different health worker to population ratios across the country's regions. The highest ratio is found in Dushanbe with its large republican health facilities, followed by low-population-density GBAO. Third is Sughd oblast, which is also the only region with a meaningful private health care sector that adds roughly five health care workers per 10,000 population to the public total. The lowest ratios are found in Khatlon oblast and the RRS. All regions, however, exceed the 44.5 clinical health workers per 10,000 population considered the minimum to deliver a UHC benefit package (World Health Organization 2016a). Moreover, while evidence on health worker caseloads is scarce, findings from a 2014–2015 survey of primary health care providers in Sughd and Khatlon oblast show that, clinical staff, on average, see only 3.8 patients per day (Ahmed et al. 2019). Staffing redundancies at the primary care level are also identified by Prytherch et al. (2019). A more detailed analysis of the labor market for health workers in Tajikistan is needed to assess whether there is potential for consolidation, including disaggregated data on different cadres of existing health workers and their supply and distribution, total renumeration from different sources, productivity, and demand for health workers in neighboring countries.

Figure 6.55: Trend in Clinical Health **Figure 6.56: International Comparison of Clinical Health Care Workers**
Care Workers per 10,000 Population **per 10,000 Population by Cadre, Latest Available Data**
in Tajikistan by Cadre, 2011–2017
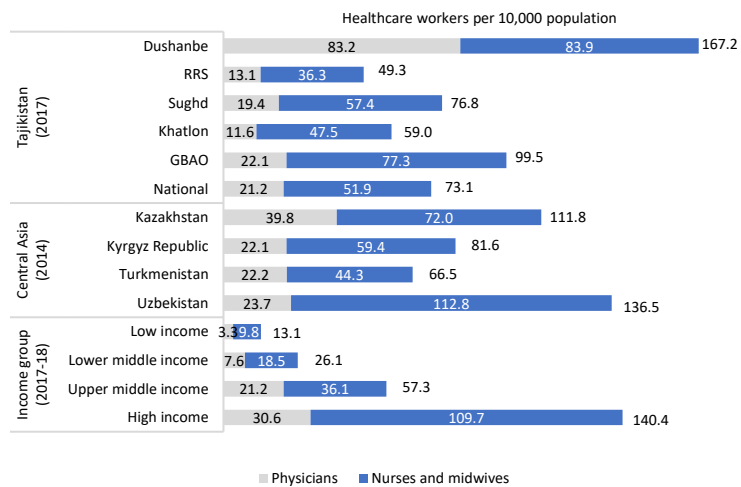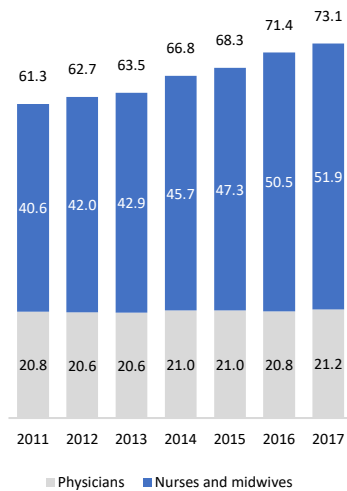
Source: Tajikistan data from District Health Information System (DHIS), data for other Central Asian countries and country income groups from World Development Indicators (WDI). Country income group data for physicians from 2017 and for nurses and midwives from 2018.

Tajikistan's doctor-to-nurse ratio is similar to that of other Central Asian countries but the share of specialists among physicians is very high. Regarding the "skill mix" of public health care workers, Tajikistan nurse to total clinical health worker ratio, at 71 percent, is roughly similar to that of its neighbors and the average across the EU-15 countries with their more efficient health care systems. The share of general practitioners and family doctors among all physicians, however, remains low despite Tajikistan's development partner-assisted efforts in recent years to train and place more family doctors and strengthen their role as gatekeepers for higher level care (World Health Organization 2016b). A further bolstering of the role of generalist family doctors over narrow specialists likely bears potential for efficiency gains, but for the transfer of tasks not to lead to detrimental results, family doctor skill levels, their gender-mix, and the cultural acceptance of the new system need to be carefully monitored (Prytherch et al. 2018, Nabieva and Souares 2019, Prytherch et al. 2019).

Figure 6.57: Distribution of Clinical Health Care Workers across Cadres in Central Asia, latest Available Year
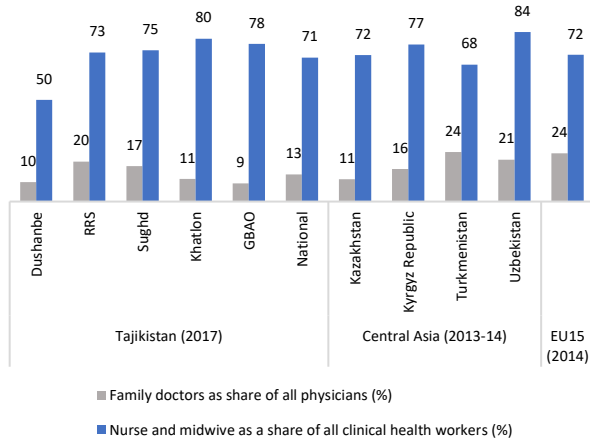
Source: Tajikistan data from District Health Information System (DHIS), data for other Central Asian countries and country income groups from WHO Health for All (HfA) database.

Findings from clinical vignettes administered to PHC workers reveal substantial child health knowledge gaps, including excessive use of antibiotics. The aforementioned 2014–2015 primary care facility survey that was conducted to establish a baseline for the World Bank's

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performance-based financing project also elicited PHC provider knowledge with clinical vignettes, as family doctors and nurses were asked about their response to hypothetical clinical cases (Arur et al. 2017). The results indicate that lack of knowledge is in part responsible for the effective coverage gaps discussed in Part 5. For instance, in Khatlon, only about 60 percent of family nurses and family doctors correctly answered that they would refer a severely dehydrated child to a hospital and less than half would have administered an intravenous infusion as recommended by clinical guidelines (Figure 6.58). Moreover, 20 percent of family nurses and 27 percent of family doctors responded that they would administer antibiotics, which was contraindicated in the described clinical case.

Figure 6.58: Results of Child Health Knowledge Test of Primary Health Care Clinicians in Tajikistan, 2014–2015
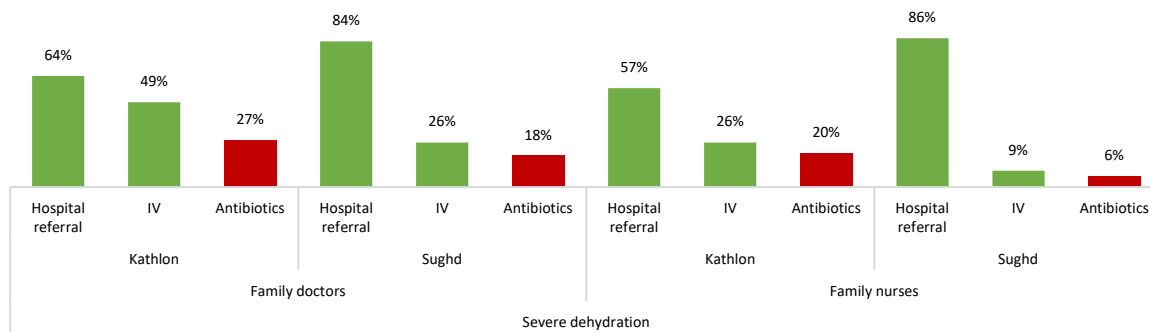
Source: Data from clinical vignettes administered as part of a 2014–2015 survey of primary health care providers in Sughd and Khatlon oblasts (Arur et al. 2017).

Clinical vignettes also show large knowledge gaps in PHC providers' handling of cardiovascular conditions. Clinical vignettes were also fielded to explore PHC provider knowledge on cardiovascular conditions, which represent a rapidly rising share of the disease burden in Tajikistan (see Part 4). Not more than 60 percent of family doctors and 40 percent of family nurses responded to the hypothetical case with the correct set of examinations, and less than 50 percent of both cadres asked relevant questions about the patients' medical history (Figure 6.59). High rates of providers not adhering to clinical guidelines are also common in high-income countries (Milchak et al. 2004), but as a source of inefficiency they require particularly urgent attention in resource-constrained environments like Tajikistan. Ongoing efforts to strengthen medical education and training of current health workers must therefore be strengthened (Lechthaler et al. 2020, Kempers et al. 2020).

Figure 6.59: Results of Cardiovascular Health Knowledge Test of Primary Health Care Clinicians in Tajikistan, 2014–2015

Patient surveys indicate low levels of absenteeism, short wait times and satisfaction with staff attitudes, but also an exceptionally high rate of providers asking for informal payments. Rural residents experience problems with public health care at twice the rate than urban residents. Figure 6.60 shows how patients in Tajikistan and its neighboring countries view the performance of public health care workers according to five indicators. For every indicator, patients in Uzbekistan are the least likely to perceive them as a problem. Tajik patients report the second lowest rates for four indicators: possibly a reflection of the very low caseloads in Tajikistan, absenteeism and wait times are reported as problems by a much lower share of patients than in Kazakhstan and the Kyrgyz Republic. Patients in Tajikistan do report relatively low reported rates of disrespectful treatment from health care workers and facilities not being clean. The one indicator where Tajikistan negatively stands out, however, is the share of patients reporting being pressed by providers to make informal payments. At 52 percent, and mirroring results presented above, the rate is 10 points higher than in the Kyrgyz Republic, more than twice that in Kazakhstan, and four times that in Uzbekistan. Overall, 58 percent of respondents in Tajikistan reported to be satisfied with the health care they received, while 11 percent reported to be neither satisfied nor dissatisfied, and 31 percent reported to be dissatisfied (results not shown in Figure). Disaggregation of the Tajik results by area of residence reveals stark urban-rural inequity, as rural residents are at least twice more likely to experience every one of the five health worker performance problems than urban residents.

Figure 6.60: Problems Experienced by Patients of Public Health Care Facilities in Central Asian Countries, 2016
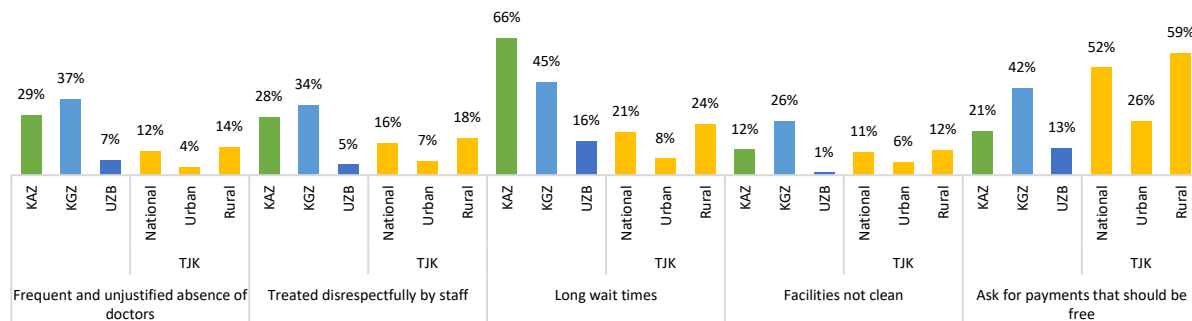
Source: Life in Transition Survey (LITS) III.
Notes: KAZ = Kazakhstan, KGZ = Kyrgyz Republic, UZB = Uzbekistan, TJK = Tajikistan.

Medical goods and capital

There are several disconnected supply chains for the public procurement of drugs, and no coordination among hospitals for inpatient drug procurement. As shown in Figure 6.53 above, just 4.3 percent of public health care spending is used to procure medicines and medical goods—a direct result of lacking public drug coverage for the large majority of the population, which, in turn, drives the country's high OOPEs. The limited scope of medical supplies provided through the public system—drugs and vaccines administered through vertical programs, medicines for hospital treatment, and outpatient drugs for the disease and population groups covered under Decree 600 and BBP—is procured and distributed through several disconnected supply chains (Stobbelaar and Machmudov 2018a). Development partner-funded supplies, like most routine vaccines, and drugs for the treatment of tuberculosis and HIV, as well as a small

number of government-financed medicines for specific diseases, like insulin, are centrally procured, either by UN agencies, or through international, competitive bidding processes. Most drugs designated for inpatient treatments and for the disease and population groups included in the public benefit packages are, however, purchased by oblast and rayon central hospitals from private suppliers with their own, scarce funds, using a national tendering process for larger orders. Absent coordinated bulk purchasing with other hospitals, even larger orders of these oblast and rayon hospitals do not reach volumes that entice suppliers to grant meaningful discounts.

Stockouts are common even for the narrow list of drugs in the public benefit packages and pharmacies on average carry less than 40 percent of medicines on the country's essential drug list. Because of the fragmentation and underfunding of public drug procurement, stockouts are common. Figure 6.61**Error! Reference source not found.** shows data on the availability of medicines from the country's essential drugs list from a survey of PHC facilities in Sughd and Khatlon oblasts (Arur et al. 2017). Only paracetamol and oral rehydration salts were found in a majority of facilities in both regions, whereas many other essential drugs and supplements, like mebendazole for deworming, and iron and Vitamin A tablets for pregnant women and young children were available in only few facilities. Unavailability of essential drugs is not limited to public health care providers (Akkazieva et al. 2014). A survey of public and private pharmacies in Tajikistan revealed that, on average, both carried less than 40 percent of essential drug list medicines (Stobbelaar and Machmudov 2018b).

Figure 6.61: Drug Availability in Primary Care Facilities in Sughd and Khatlon Oblasts, 2014–2015
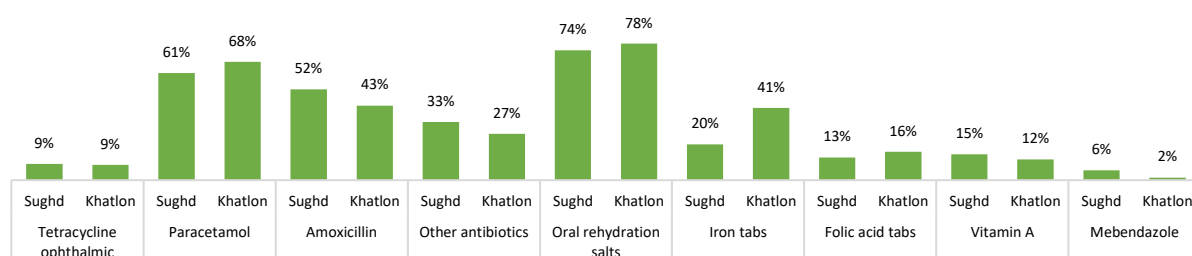
Source: Data from 2014–2015 survey of primary health care providers in Sughd and Khatlon oblasts (Arur et al. 2017).

The absence of central drug price regulation leads to large variations in drug prices across pharmacies and both branded and generic drug prices pose a substantive financial burden for households. Reflecting the absence of central price regulation, drug prices vary substantially across pharmacies, with branded drugs typically being more expensive in public pharmacies (Stobbelaar and Machmudov 2018b). Branded drugs in particular are often not affordable and exceed the prices of generic medicines manifold. For example, a full course of hypertension drug captopril amounts to 13 times the lowest daily public sector wage for its branded version (Stobbelaar and Machmudov 2018b). The cost of generic captopril is much lower but still stands at 1.3 times the lowest daily public sector wage, a substantive financial burden for poor households.

Cultural factors, misaligned provider incentives, and lack of regulation lead to inefficient use of medicines, in particular antibiotics. Further undermining efficiency, prescription practices of public providers in Tajikistan have been shown to often contradict established medical guidelines. In a 2014 survey of patients seen by family doctors in eight rural districts, the median consultation resulted in the prescription of no less than three drugs, and over half of patients were

prescribed antibiotics (Donadel et al. 2016).[56] Injectables, often of questionable clinical value and easily substituted by cheaper oral formulations, were also prescribed with high frequency.. Over-prescription of antibiotics and injectables is not only due to supply-side factors like lack of provider knowledge and pressures from the pharmaceutical industry (Richardson, Sautenkova, and Bolokhovets 2015). Due to established norms, they may be requested by patients even in the absence of clinical indications, with providers dependent on informal payments less able to resist (Kaae et al. 2020). The absence of rigorous prescribing practices also invites harmful and inefficient self-medication. Antibiotics do not require a prescription in Tajikistan, and as a result, many people purchase them from retail pharmacies without prior consultation of a medical professional. It is also reported that for lack of money, some patients do not buy full courses of antibiotics, contributing to the rise of multi-drug-resistant bacteria (Kaae et al. 2020).

Figure 6.62: Availability of Infrastructure and Equipment in Primary Care Facilities in Sughd and Khatlon Oblasts, 2014–2015
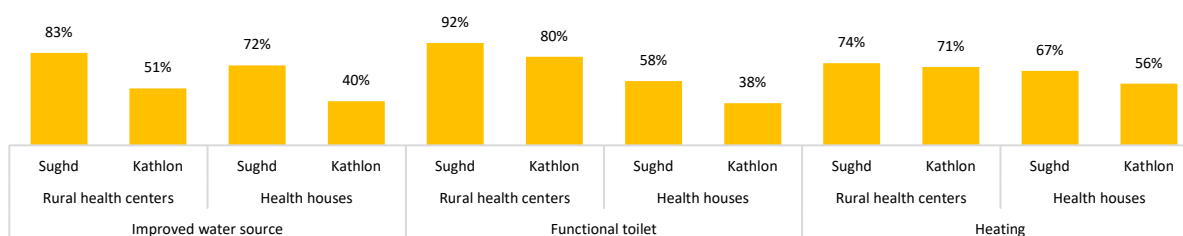
Source: Data from 2014–2015 survey of primary health care providers in Sughd and Khatlon oblasts (Arur et al. 2017).

Because of low levels of public capital investments in health, public health infrastructure and equipment are in decay or lacking altogether. With capital expenditures only accounting for 3.2 percent of public health care spending, the Government of the Republic of Tajikistan continues to underinvest in the maintenance and further development of its health care infrastructure and equipment (Figure 6.53). The aforementioned survey of PHC facilities in Sughd and Khatlon sheds some light on the degree of underfunding (Figure 6.62). Facilities are generally less well equipped in the poorer Khatlon oblast, where 20 percent of rural health centers have no functional toilet and only half have access to clean water. Clean water access, at 40 percent, is even worse for Khatlon health houses. Moreover, a quarter of rural health centers in Sughd have no heating, an essential requirement for the winter months were average temperatures in the oblast can fall below zero degrees Celsius.

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[56] Extremely high antibiotics use of about 35 defined-daily-doses per inhabitant was also found by a 2011 cross-country study (Versporten et al. 2014).

PART 7 – RECENT HEALTH FINANCING REFORMS

Over the past decade, Tajikistan has introduced several pilot or national level health system reforms to address challenges such as the low levels and unequal regional distribution of financial allocations for PHC, the lack of provider incentives to improve health care quality and access, and the high prevalence of informal health care payments and financial catastrophe from OOPEs. To assess the successes and shortcomings of three of these reforms—per capita financing (PCF) of PHC, performance-based financing (PBF) of primary PHC, and the BBP and Decree 600 benefit packages—this part summarizes findings from earlier evaluations and provides some new analysis.

PER-CAPITA FINANCING OF PRIMARY CARE

To improve levels and equity of PHC funding and increase PHC utilization, Tajikistan is now implementing its PCF policy for PHC nationwide. The policy, however, lacks key features of capitation policies elsewhere. In 2016, Tajikistan, with support from the World Bank, began rolling out the PCF policy for PHC providers in 55 of its 88 city and rayon health centers.[57,58] As of 2019, the policy was operational throughout the country (Figure 7.1). The policy has three goals: (1) increasing financial resources for PHC; (2) achieving a more balanced distribution of funding across PHC providers in different parts of the country; and (3) enhancing the efficiency of health care provision by shifting health care utilization patterns toward PHC. The policy establishes a minimal PHC funding requirement per person in PHC providers' catchment areas which varies by provider type and is adjusted annually to account for changes in the cost of care and macroeconomic conditions. In 2019, this minimum per capita rate amounted to about TJS56 for city health centers, TJS46 for rayon health centers, TJS38 for rural health centers, and TJS26 for health houses, with the differences across providers being reflective of differences in current cost structures[59] The rates are adjusted upwards for PHC providers in Dushanbe on account of offering more specialized services and for GBAO because of its challenging geography and low population density. If the standard, input-based budget appropriated to a facility is insufficient to meet the minimum per capita rate, the facility receives additional funds from the republican budget. Thus, unlike under fully-fledged capitation where all funding is centrally pooled and distributed according to a common formula (World Health Organization 2019b), the Tajik policy has no mechanism ensuring equitable per capita funds across providers beyond securing the minimum rate. In fact, by setting a higher minimum funding threshold for city health centers than for the networks of rayon health centers and their subordinate rural health centers and health houses which together serve the same functions as city health centers, the policy itself imposes inequalities in minimum funding which are driven by current cost structures rather than population need. Moreover, it also does not grant providers greater autonomy to actively manage their funds according to local needs and to enhance efficiency as another key feature of capitation elsewhere. Instead, financial allocations remain mechanically tied to ring-fenced, input-based line-items.

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[57] Earlier versions of the capitation policy which concerned only the small budget share of unsecured line-items were piloted from 2005 and implemented nationally since 2010 (Khodjamurodov et al. 2016).

[58] Government decree No. 827 of December 31, 2015.

[59] Rural health centers and health houses are not budget entities—their funding is managed by the district health centers they operate under. The per capita financing policy, however, requires that in-kind appropriations to them amount to their respective per capita minimum threshold.

Figure 7.1: Cumulative Number of Cities and Rayons Included in the Per-Capita Financing Scheme, 2016–2019
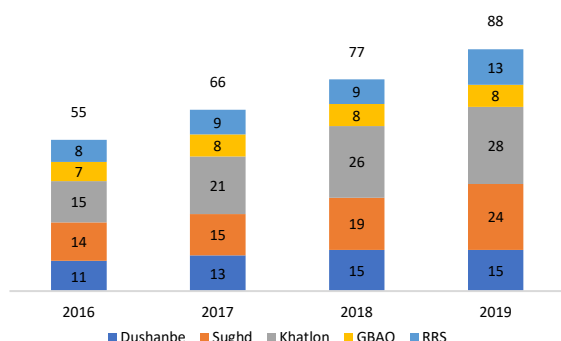
Source: MoHSP.

Figure 7.2: Trend in Nominal and Real Capita Expenditure on Primary Care in TJS, 2015–2019
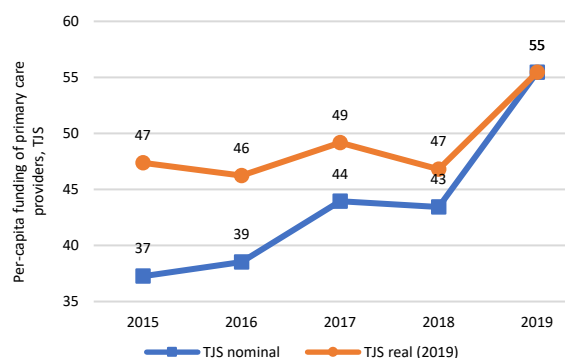
Source: Authors' calculations based on primary care budget data provided by the Ministry of Health and Social Protection of the Republic of Tajikistan.
Notes: Nominal Somonis deflated using consumer price index based on inflation data from IMF World Economic Outlook (October 2020) database.

The PCF policy lacks rigorous evaluation, and the available data indicate that while primary care expenditure rose in absolute terms, its growth did not exceed that of total public health care spending. No rigorous evaluation of Tajikistan's PCF policy has to date been published, but budget data show that through its subsidy mechanism, the policy secured minimal funds for PHC providers in rayons which previously did not meet the minimum per capita threshold. Roughly TJS25.3 million were redistributed to meet the minimum rate in 2019, representing about 5 percent of the country's total PHC budget (Nurov 2019).[60] Nationwide trends in primary care financing suggest some progress toward the goal of increased overall PHC funding: After adjusting for inflation, Tajikistan's per capita PHC budget increased by 17 percent between 2015—the year before the PCF policy was first implemented—and 2019 (Figure 7.2).[61] PHC budget growth, however, trailed the increase in total non-republican public health expenditure, which rose by 30 percent between 2015 and 2019 according to MoF data. Moreover, as discussed above, PHC expenditure levels remain far below internationally recognized minimums to provide universal, quality PHC. Regarding expenditure patterns, over the 2015–2019 period, the salary share of the PHC budget reduced from 93 percent to 87 percent, indicating a small increase in budget space for other expenses like medicines and other medical supplies. These, however, still constitute a mere 1.5 percent of the PHC budget (Table 7.1).

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[60] Rollout began with providers which already met the minimum per capita spending threshold so that no additional funds were appropriated in the policy's first year of implementation. Providers with additional funding needs started being enrolled from 2017 and received TJS1.8 million on top of their line-item budgets. In 2018, the top-ups amounted to TJS5.9 million.

[61] All primary care spending data in this section refer to planned budgets and not actual expenditures, as the latter were not available for only year after the policy was implemented. In 2018, where we could obtain data on both budgets and expenditures, the median budget execution rate across all city and rayon health centers in the country was 100 percent, with 17 percent of providers executing under 90 percent of their budgets. This indicates that the budget data form a reasonable, if imperfect, approximation of actual primary health care spending.

Table 7.1: Primary Care Budgets by Region and Budget Item, 2019

	Salaries (%)	Medicines and medical supplies (%)	Communal expenses (%)	Capital investments (%)	Other (%)
National	*87.4*	*1.5*	*2.*	*4.3*	*4.*
Dushanbe	83.3	2.0	2.6	12.1	0.0
Sughd	81.5	1.8	3.4	5.8	7.5
Khatlon	94.3	0.9	0.8	0.8	3.2
GBAO	89.8	1.1	4.9	0.8	3.4
RRS	87.9	1.6	1.7	1.	7.1

Source: Author's calculations based on data provided by the Ministry of Health and Social Protection.

Inequalities in the distribution of PHC budgets across providers and the population can be visualized using Lorenz curves. Figure 7.3 and Figure 7.4 show Lorenz curves of PHC funding for 2015 and 2019 that are based on data provided by MoHSP. In a Lorenz curve chart, the x-axis represents the cumulative share of members of a population ranked by income, from the poorest to the richest (O'Donnell et al. 2007). The y-axis gives the cumulative share of the population's total income that accrues to the respective population share on the x-axis. A diagonal line across the chart area represents the "line of equality," where the cumulative, income-ranked population share is identical to the cumulative income share, that is, where incomes are identical for every member of the population. The Lorenz curve, by contrast, represent the actual distribution of incomes across the population. The greater the area between the Lorenz curve and the line of equality, the more inequitable the distribution of incomes across the population. The degree of inequality can also be quantified by the Gini-Index, which graphically is represented by half the area between the Lorenz curve and the line of equality, and is bounded between 0 and 1, with higher values indicating greater inequality.

Inequalities in per capita budgets persist between PHC providers. For Figure 7.3, all city and rayon health centers of Tajikistan form the population of interest, and instead of income, the figure uses each center's per capita rate as the ranking variable. The Lorenz curves in Figure 7.3 are therefore informative about the degree of inequality in per capita rates *between health centers*. Lorenz curves are shown for 2015, before PCF was introduced, and 2019, the first year of nationwide rollout. The curves show that there was substantial inequality in per capita rates in 2015, with a Gini-coefficient of 0.21, and that inequality had barely reduced in 2019, when the Gini coefficient still stood at 0.19.[62] For Figure 7.4, the population of interest are all Tajik citizens who are ranked on the x-axis by the per capita rate of the primary care provider in whose catchment area they reside. The y-axis shows the cumulative share of the country's total PHC budget accruing to the respective population share on the x-axis. Figure 7.4 is hence informative about the degree of inequality in per capita PHC budgets *faced by Tajikistan's citizens*. Like Figure 7.3, it shows little reduction in inequality between the period before PCF and the period after nationwide rollout.[63] In line with its design which only establishes a minimum per capita rate, Tajikistan's PCF policy has not equalized per capita budgets for PHC providers.

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[62] In the income inequality literature, a Gini coefficient of 0.2 is considered to represent high levels of equality. This interpretation, however, does not apply to the assessment of a capitation policy, whose explicit goal is full, or near equality.

[63] Moreover, the degree of inequality—the area between the Lorenz curves and the line of equality, or the Gini coefficient, which reduced from 0.2 to 0.17—is strikingly similar across Figure 7.3 and Figure 7.4, indicating that differences in PCF rates do not correlate with the size of the catchment area population. In other words, it is not the case that a few health centers with small catchment area populations drive the results in Figure 7.3, which is also why they are robust to the exclusion of health centers in GBAO with its upward-adjusted per capita rate.

Figure 7.3: Lorenz Curves of Per Capita Primary Health Care Budgets by Health Center in Tajikistan 2015 and 2019
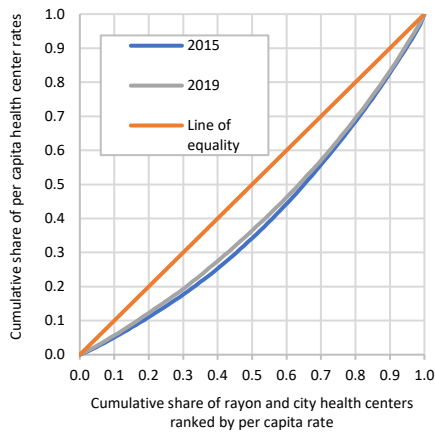
Figure 7.4: Lorenz Curves of Per Capita Primary Health Care Budgets by Populatoin in Tajikistan 2015 and 2019
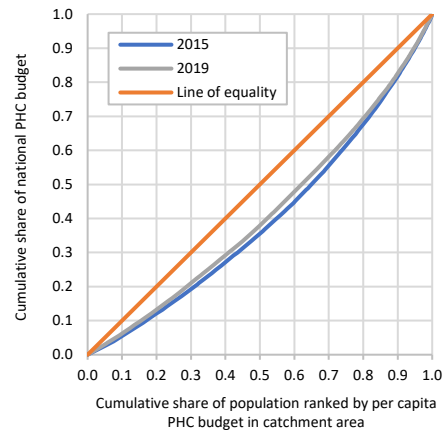
Source: Author's calculations based on population and primary health care budget data provided by Ministry of Health and Social Protection of the Republic of Tajikistan.

For a more equitable distribution of PHC funding, the PCF policy needs to move from securing minimal per capita expenditures to full needs-based redistribution of primary care funds. The limited progress of the PCF policy in improving regional equity in PHC funding is directly related to its design, which ensures a minimum of expenditure in all rayons but falls short of establishing an equitable distribution of funds according to a needs-based formula. In fact, the policy itself perpetuates funding inequities by stipulating higher minimum funding rates for city health centers than for rayon health centers and their subordinate facilities which are responsible for the same PHC function. Thus, the vast majority of PHC funding continues to be appropriated through input-based line-item budgeting which largely follows a regional distribution of facilities and health care workers which is only loosely tied to current catchment area populations. As of 2019, the primary care staff to 1,000 catchment area population ratio varied between 2.1 and 8.1 across all city and rayon health centers in the country, with a mean of 4.3 and a standard deviation of 1.3.[64] As staff costs continue to absorb the lion's share of PHC funds, budget space to cover medical supplies and other running costs essential to providing quality care remains scarce. Quality gaps will therefore continue to undermine the goal of shifting health care utilization patterns toward primary care providers (World Health Organization 2014, Nurov 2019).

The government has committed to adjustments of the current PCF policy, however detailed plans are yet to be elaborated. The government's "Strategic Plan on Health Financing Reform in the Republic of Tajikistan for the period 2019–2021" partly addresses these concerns, committing to further monitoring and evaluation, the inclusion of age and gender into the capitation-formula and, crucially, the development of schedules for the step by step equalization of funds between city and rayon health centers based on a single per capita rate.[65] However, detailed plans on how to transition from the current system of staffing norms and input-based line-item budgeting to reimbursement by a single capitation formula have not yet been formulated.

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[64] Author's calculations based on data provided by the Ministry of Health and Social Protection of the Republic of Tajikistan.
[65] Decree №394 of the Government of the Republic of Tajikistan, August 6, 2019.

Any plan will have to be crafted with careful consideration of its consequences for health workers, as it will strip salary funds from facilities currently overstaffed relative to their catchment area population.[66] Additionally, a regulatory framework under which providers are granted increased autonomy to actively manage funds would help achieve efficiency gains. Moreover, even if a more equitable regional distribution of funds and increased fungibility of the currently protected salary line item are achieved, improvements in care quality will remain elusive without further increases in overall PHC funding.

PERFORMANCE-BASED FINANCING OF PRIMARY CARE

Tajikistan has piloted PBF of PHC providers since 2015. To address gaps in population coverage and service quality, Tajikistan, in cooperation with the World Bank, introduced PBF of PHC providers in seven pilot rayons in the Sughd and Khatlon oblasts in January 2015. Similar in design to PBF programs elsewhere (Gergen et al. 2017), the Tajik pilot financially rewards rural health centers and health houses for increasing the volume and quality of maternal and child and hypertension care (World Bank 2019). Performance bonuses are based on a quality-adjusted fee-for-service formula and released quarterly upon verification of satisfactory performance by an independent agency. Facilities can use up to 70 percent of the bonuses to top up staff salaries, a high rate in comparison with PBF in other countries.

The evidence on the effectiveness of PBF to improve health care access and quality from other countries is mixed and few cost-benefit analyses are available. PBF is often considered to have transformative potential for health care systems beyond changing the financial incentives of provider reimbursement, as it typically requires profound changes in provider autonomy, health care and financial data collection and use, and oversight and accountability mechanisms (Fritsche, Soeters, and Meessen 2014). The available evidence on the effectiveness of PBF for improving health care quality and utilization is, however, mixed, and effects on health outcomes have yet to be demonstrated (Witter et al. 2012, Eichler et al. 2013, Blacklock et al. 2016, Das, Gopalan, and Chandramohan 2016). Cost-benefit analyses are only available for a small number of PBF programs (Kandpal et al. 2018, Zeng et al. 2018, Salehi et al. 2020), an important knowledge gap given PBF's high implementation and monitoring requirements (Renmans et al. 2016, Turcotte-Tremblay et al. 2016, James, Lawson, and Acharya 2020). Comparative effectiveness also remains largely untested, but a small number of studies that compare the impacts of PBF to those of unconditional increases in facility budgets find few statistically significant differences in health care access and quality (de Walque et al. 2017, Kandpal et al. 2018, Zeng et al. 2018).

In line with the literature, a recently completed impact evaluation finds mixed effects of PBF in Tajikistan. With a combination of facility surveys, patient exit interviews, and household survey data, Ahmed et al. (2019) estimate the causal effects of Tajikistan's PBF program three years after it was first rolled out in 2015. They find that the performance bonuses increase health worker salaries by 70 percent on average. In terms of facility infrastructure and equipment, the program led to sizable improvements in eight of 18 indicators for rural health centers and in five of 14 indicators for health houses. For provider knowledge—measured with clinical vignettes of

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[66] The experience of Thailand in moving toward per capita payments for primary care as part of its Universal Health Coverage scheme is instructive here. The original reform plans that required the inclusion of salaries in the capitation rate was met with fierce opposition by the medical community which eventually led to salaries being separated from capitation payments (Hughes and Leethongdee 2007).

child infectious disease and malnutrition as well as adult cardiovascular disease—there were improvements in 10 of 18 indicators. The knowledge improvements, however, only partly translate to better health care provision, as patient observations showed improvements in only two of nine indicators of care quality. Indicators of patient satisfaction with the services received increased in ten of 20 cases. In terms of health care access, statistically significant increases occurred for three of 19 indicators—use of postnatal care, the probability of having one's blood pressure measures in the past year and use of primary care providers among adults over 40. There were no impacts on antenatal care, child growth monitoring, child vaccinations, and family planning. The evaluation did not find any improvements in health as rates of child malnutrition and raised blood pressure in the community remain unchanged by the program.

Comparative cost-benefit analysis and studies of financial feasibility should be carried out before scaling is considered. Some of the indicators Ahmed et al. (2019) examine may require more time to improve than the three years between the program's start and endline data collection for the impact evaluation, particularly for childhood stunting and adult hypertension. Changes in program design to increase effectiveness are also currently being undertaken. But the currently available weak-to-mixed evidence on improvements in care quality and access that is in line with experiences from other countries casts doubts on whether substantive health gains can be realized in the future. Given this uncertainty, a number of topics should be addressed before implementation at-scale is considered. Most importantly, comparative effectiveness and cost-benefit analyses need to be carried out to assess if the program's effects justify the large increase in health worker salaries, in particular because such increases are unlikely to be feasible under future government financing. These analyses should include assessments of the technical support systems required to support PBF (e.g., computers) and capacity of health care workers and health system administrators to meet the complexities of PBF implementation. Moreover, it needs to be clarified how PBF is to be aligned with capitation financing for PHC.

BASIC-BENEFIT PACKAGE AND DECREE 600

The BBP did not reduce OOPEs substantively, and there is no rigorous evidence on the impact of Decree 600. As described in Part 3, the main goals of the development partner-supported BBP and the government-operated Decree 600 were to formalize informal health service payments and to reduce the OOPE burden on patients by introducing fee exemptions and subsidies. This report did not identify any quantitative empirical studies on the impact of Decree 600, but several surveys have been carried out to evaluate the impact of the BBP on OOPEs. Controlled before-after analysis of exit interviews from patients seeking ambulatory or inpatient care in hospitals shows reductions in informal payments and reduced shares of patients making any OOPE payments (Ya Akab et al. 2008, MoHSP 2013). But higher OOPEs among those still making payments offset these reductions in the probability of OOPEs, so that patients' average OOPEs only slightly decreased (Ya Akab et al. 2008, Bobokhojaeva et al. 2009) or even increased (MoHSP 2013). Strikingly, only slight OOPE reductions were found for the formally fee-exempt, who accounted for 37 percent of patients at the hospital and 32 percent of patients at the PHC level in 2008 (Bobokhojaeva et al. 2009), shares which had increased to 54 and 41 percent, respectively, by 2019 (MoHSP 2019). At the PHC level, time-series analysis of OOPEs of patients in four pilot rayons found no reductions in the share making informal payments and substantive increases in overall OOPEs (Schwarz et al. 2013). A more recent study shows that for chronic disease patients, family doctor visits are associated with lower OOPEs in BBP districts, but even there they remain high, at almost 18$US (Fischer et al. 2020). There is no evidence on whether the strengthening of incentives to obtain PHC provider referrals for higher level care under the

BBP and Decree 600 have led to changes in health care utilization patterns.[67] Such changes are unlikely, and even undesirable, unless the quality of PHC is strengthened to the degree that it can function as a gatekeeper without curtailing access to appropriate care for the population.

While no differences were found in the uptake of ambulatory care, public health care expenditure, and OOPEs on copays, new analysis does show lower hospitalization rates under the BBP than under Decree 600. Given the similarity of benefits between BBP and Decree 600, it is of interest whether the development partner involvement and somewhat more generous subsidies of the BBP coincide with differential outcomes. The hypothesis is tested with rayon level data from the 2017 DHIS and the 2014 NHAs. The analysis uses inverse probability weighing to adjust for differences between rayons in terms of per capita consumption and poverty rates,[68] the number of hospital beds, physicians, and other cadres of health care workers per population, and population density.[69] The findings suggest no difference between BBP and Decree 600 rayons in terms of public health expenditure per capita, OOPEs for copays for public health care, timely initiation of antenatal care, or outpatient care visits. There is, however, an almost 30 percent lower hospitalization rate where the BBP is implemented. Whether this interesting association is causal, for instance as a result of more effective gatekeeping in BBP rayons, should be explored in future research.

Both benefit packages are underfunded and plagued by uncertainty about benefits among patients and providers, as well as regional differences in effective coverage. The evidence discussed above, the continuing upward trend in catastrophic OOPEs in the country (Figure 6.19), and the persistently high shares of patients reporting informal payments (Figure 6.17 and Figure 6.60) are in line with the general agreement in the literature that both BBP and Decree 600 are not sufficiently funded to provide effective coverage (Kutanov et al. 2013, Khodjamurodov et al. 2016, Jacobs 2019). Both packages are also reportedly plagued by a lack of clarity about benefits among health care providers, subnational budget administrators, and patients, as well as by regional heterogeneity in implementation that is another direct result of the input-based rather than needs-based allocation of public health care funding (Khodjamurodov et al. 2016, Jacobs 2019).

Plans to address the benefit packages' shortcomings are part of the government's health financing strategy and require timely action for meaningful impact on financial protection. The Government's Strategic Plan on Health Financing Reform in the Republic of Tajikistan for the period 2019-2021 acknowledges the abovementioned shortcomings, and commits to further evaluation and monitoring of the BBP to inform, under realistic budgetary assumptions, a better streamlining of covered services and their prices with the population's health needs, improved targeting of fee-exempt beneficiaries to ensure the most vulnerable are reached, and enhanced communication of benefits to all stakeholders. Unless these goals are achieved, budget space substantively increased, the quality of PHC strengthened, and the crucial transition from line-item budgeting to needs-based strategic purchasing undertaken, the planned rollout of the BBP to other parts of the country is unlikely to meaningfully improve health care access and limit the burden of OOPEs for the Tajik population.

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[67] Rechel and Khodjamurodov (2010) cite an unpublished report by Schneider (2009) indicating lower hospitalization rates in the BBP pilot districts than elsewhere in the country.

[68] The poverty and consumption data are for 2015 and come from Seitz (2019).

[69] With inverse probability weighing program impacts can be estimated by weighted regressions where weights are obtained by computing a propensity scores of program inclusion based on observed characteristics (Desai and Franklin 2019).

PART 8 – POLICY OPTIONS AND RECOMMENDATIONS

While Tajikistan has made big strides in improving health outcomes and health care access for its population over the past two decades, great challenges remain. Rates of infant and maternal mortality continue to lag those of its neighbors, and most people suffering from the growing burden of noncommunicable diseases remain untreated. Rates of catastrophic health care spending among households are high and growing, and many people forgo care for financial reasons, exacerbating already large socioeconomic inequalities in health care access and health outcomes. Even when health care is accessed, poor quality influenced by lack of provider knowledge, equipment, and treatment norms often compromises effective coverage. Taken together, these shortcomings in access and quality are estimated to cause almost 10,000 avoidable deaths in Tajikistan per year and a massive loss of productive potential for the country. To address this situation, more resources to public health care are required, accompanied by policies that support a more efficient and equitable use of these resources.

DEDICATE MORE RESOURCES TO THE PUBLIC HEALTH CARE SYSTEM

Despite steady increases over the past decade, Tajikistan's public health care spending, at US$18, remains far below the estimated US$40–79 needed to provide an essential benefit package to 80 percent of its population. In principle, there are four avenues to increase public resources for health:

1. **Macroeconomic growth is an important driver of public health care spending, but short-term growth prospects are limited**: GDP growth is one of the primary drivers of increased public health care spending (Ke, Saksena, and Holly 2011). Prospects for economic growth, however, are poor in the short- to mid-term due to the COVID-19 pandemic.

2. **Foreign aid for health has increased substantially during the pandemic but is not a sustainable source of health financing in the mid- to long-term**: As shown above, at US$1.5 per capita and about 8.5 percent of total public health spending, Tajikistan receives little development partner support for a low-income country. Preliminary data suggests that the COVID-19 pandemic led to a drastic short-term increase in development partner funding for health. But even in the most optimistic scenarios, increased aid will only make a small contribution to closing the public health care funding gap. Moreover, if Tajikistan again graduates to lower middle-income status in the future, development partners will likely reduce their involvement.

3. **Increasing domestic taxes, social health insurance contributions or other public levies**: With private health care spending at 5 percent of GDP, Tajik households demonstrate a high willingness to spend their income on health. The distribution of private health care spending is, however, strongly pro-rich, indicating high levels of forgone care among the poor, and rates of catastrophic medical spending are high and rising. Also, private health spending tends to be inefficient and even harmful, with much of it going to medicines that are not needed or even contraindicated. It is therefore desirable that more of what is currently private health care spending is absorbed by the government and channeled back to Tajiks through an efficiency and equity enhancing public benefit package. Internationally, different instruments have been tried to generate more resources for public health care from households:

3.1. **Formal user fees are not recommended**, as they typically lead to only small income gains for providers and reductions in health care utilization (Lagarde and Palmer 2008, Lagarde and Palmer 2011).

3.2. **Contributory health insurance schemes are not recommended.** Labor tax-based mandatory social health insurance with contributions from large parts of the population are typically hard to enforce in countries with large informal sectors like Tajikistan (Acharya et al. 2013, Agyepong et al. 2016). They can even incentivize increased informality (Levy 2010). Voluntary insurance schemes tend to suffer from large degrees of adverse selection (Dror et al. 2016, Fadlallah et al. 2018) and low (re-)enrollment (Agyepong et al. 2016, Capuno et al. 2016, Wagstaff et al. 2016). Moreover, countries which first covered formal sector workers with contributory schemes have learned that it is politically difficult to later integrate the informal sector, risking lasting fragmentation of funding pools and coverage inequity (McIntyre et al. 2008, Cotlear et al. 2015, Yazbeck et al. 2020).

3.3. **Tax-financed coverage extensions are effective, but fiscal space will likely remain limited in the short- to mid-run in light of the COVID-19 pandemic. Higher excise taxes on unhealthy products could, however, be considered immediately.** Health coverage schemes financed primarily from general taxation have been shown to be the most effective tool to provide effective and equitable population coverage (Cotlear et al. 2015, Limwattananon et al. 2015, Neelsen and O'Donnell 2017, Yazbeck et al. 2020). But large increases in general tax rates or revenue will be difficult to realize in the current macroeconomic climate. Besides general taxes, excise or "sin taxes" such as on alcohol, tobacco, and foods/beverages high in sugar or salt, have frequently been suggested, as they have the twin benefits of improving health through increasing public awareness and curtailing consumption of unhealthy products, as well raising additional revenue that could be soft earmarked for the health sector (Sassi et al. 2018, World Bank 2020f). New or strengthened excise taxes could be considered immediately as a they form a tool to encourage the healthy behaviors that are crucial for slowing the rise of NCDs and, thus, to improve the financial integrity of the Tajik health care system in the long-run, and because they continue to lie below internationally recommended thresholds. For instance, taxes on alcohol and cigarettes were substantively increased in 2018, but for cigarettes the current rate of 43 percent of the retail price remains far below the WHO recommended minimum of 75 percent (World Health Organization 2019c, Chaloupka et al. 2020). Such excise taxes can be regressive in the short term, as they typically impose a disproportionately large tax burden on the poor, but extended cost-benefit analysis suggests that the resulting health improvements lead to long-run pro-poor income effects (Fuchs, Mandeville, and Alonso-Soria 2020).

4. **Rededicating public revenue currently used for other government sectors to health so that the government spending share on health reaches the recommended 15 percent**. At seven percent, the health share of total government spending in Tajikistan is the lowest in the Central Asia region, and dramatically falls short of the 15 percent threshold stipulated in the 2000 Abuja declaration (Xu et al. 2010, McIntyre, Kutzin, and Organization 2016). If the government reprioritized health care spending, it would bring the country closer to the 5 percent public health spending share in GDP that is estimated

to be a precondition for achieving adequate health care access and financial protection for its population (Xu et al. 2010, McIntyre, Meheus, and Røttingen 2017), and which currently remains stagnant at 2.2 percent. The investment case for higher public commitment to the health sector is supported by a large body of literature (Doyle et al. 2009, Nugent et al. 2018, Galasso and Wagstaff 2019, World Bank 2020b). With competing public investments in Tajikistan, it is paramount to convince policymakers of the validity of investing in human capital for enhanced productivity in the future. The additional attention given to the health sector through the COVID-19 pandemic may be a window of opportunity to raise its share in government spending.

USE PUBLIC RESOURCES FOR HEALTH IN A MORE EFFICIENT MANNER

The investment case for additional public funding for health only is valid if spending is effective and efficient, which Tajikistan can undertake several steps to achieve:

A. **Identify potential to consolidate health facilities**: Tajikistan currently has up to 40 percent more inpatient and outpatient facilities per capita than neighboring Kazakhstan and the Kyrgyz Republic, which both have lower population densities and higher health care utilization rates. It is therefore likely that a large number of hospitals and PHC facilities can be consolidated without jeopardizing geographic access. This includes the physical integration of the networks of preventive care providers such as the Republican Centers for Immunoprophylaxis and the Republican Tuberculosis Control Centers which are currently operated by the republican level with rayon and oblast PHC facilities. Without such consolidation and the resulting economies of scale, it will be challenging to make modern equipment and decent infrastructure available to a greater share of the population. Moreover, particularly for hospital procedures, consolidation will improve clinical outcomes through higher caseloads per facility and physician (Morche, Mathes, and Pieper 2016). An updated facility masterplan which identifies current redundancies is therefore recommended.

B. **Identify potential to further reduce the number of hospital beds**: Despite a steady downward trend in the number of hospital beds per population, they continue to be in oversupply in Tajikistan, with an occupancy rate of 65 percent. Further cuts by 25 percent would bring the number of beds down to the 3.6 per 1,000 population proposed in the 2011 facility masterplan. Because bed-to-population ratios and occupancy rates differ greatly across the country, an updated facility masterplan should identify where beds can be eliminated without compromising the capacity to meet increases in demand under a more generous public benefit package.

C. **Continue to invest in the improvement of health workers' skills and the quality of clinical practice and study if staffing redundancies exist**: By international comparison, the Tajik public health care system employs a large number of clinical and support staff and while few studies on human resource efficiency exists, the available evidence indicates that caseloads are far below capacity. Moreover, large gaps in health worker knowledge and the quality of health care delivery persist. It is therefore recommended to continue and expand current efforts to improve the skills and clinical practice of health care workers and to carry out more detailed analyses of the labor market for health workers in Tajikistan to assess whether there is potential for consolidation, including disaggregated data on different cadres of existing health workers and their supply and

distribution, total renumeration from different sources, productivity, and demand for health workers in neighboring countries .

D. **Continue to move from historic, input-based provider payment with protected line-items to strategic purchasing**: The input-based budgeting mechanism allocates resources based on the historic distribution of facilities and staffing norms rather than the population's health needs. This leads to regional inequities in per capita public funding which are only in part justified by differences in geographic access. To achieve a more equitable allocation, it is desirable that Tajikistan continues to progress toward strategic purchasing of public health services. To this end, it is recommended to:

D1. **Pool all public funds for health centrally and gradually introduce a single, independent payer organization**: The budget negotiations that currently take place between MoF and a myriad of main administrators and for which funding for health is bundled with that of other sectors are a source of inefficiency. Instead, an independent single payer should eventually be introduced within MoHSP or as a standalone organization which negotiates a health budget ceiling with MoF and subsequently distributes the available funding to hospitals and outpatient care providers by the strategic purchasing mechanisms recommended below. A steppingstone for such reforms could be a pilot project currently initiated with WHO-support in Sughd which intends to pool resources across five districts and introduces strategic purchasing for primary and hospital, with plans to extend to the entire oblast in the future.

D2. **Gradually complement the currently purely input-based financing for hospitals with strategic purchasing elements like case-based financing and fee-for-service reimbursement for high-cost services**. A corresponding pilot project is currently being implemented by the Asian Development Bank in three districts (Shamsuddin Shohin, Rasht, and Fayzobod). The pilot focuses on integrating MCH care delivery between primary and secondary care, with promotion of more efficient use of available funds through case-based financing at district hospitals. The change in hospital financing should include the centralized procurement and stock-management of inpatient drugs, which hospitals are currently purchasing individually.

D3. **Gradually implement full capitation for PHC.** Under the current per-capita-financing, providers continue to be largely funded based on input-norms, with a minority of facilities receiving top-ups if their input-financing is insufficient to reach a per capita minimum. Funding inequities therefore persist. Moreover, unlike under capitation financing elsewhere, facility managers continue to have no discretion for efficiency-enhancing financial and staffing decisions, as spending is mechanically determined by norms and the protection of funding for the most important line-items. Equitable and efficient primary care spending can only be achieved if the entire provider budget is determined through a common capitation formula, and if PHC managers receive more managerial autonomy. As first steps, the methodology for calculating the per capita rate should be refined to take the age and sex distribution of catchment areas into account, and a schedule for the step-by-step increase of the per capita minimum should be developed, so that more facilities receive additional funding. As an additional source of funding, and to address efficiency-hampering

duplication, functions and funding of the vertical republican programs should be merged into those of rayonal PHC providers.

D4. Carefully assess the costs and benefits of PBF for PHC before considering scale-up. While facility infrastructure and equipment and provider knowledge improved under the PBF pilot, impacts on health care utilization, quality, and health have been limited, casting doubt on whether the benefits justify an almost 70 percent increase in staff salaries, and additional managerial spending. Further research is therefore needed to examine if PBF in Tajikistan can be implemented in a financially feasible and cost-effective way.

E. Use additional health sector funding and savings from the consolidation of facilities and staff to extend public health coverage. In the absence of comprehensive, tax-financed coverage, access to appropriate treatments in Tajikistan is often determined by ability to pay, as evidenced by the much higher OOPEs and health care utilization rates among more the more affluent parts of the population. It will be challenging to achieve more equitable health care access and a reduction in catastrophic OOPEs unless a substantial portion of current fee-based services and, even more importantly, medicines are included in its public benefit packages. Moreover, without more comprehensive public health care coverage, the potential of strategic purchasing to align facility funding with health care need will remain limited, as provider incomes in areas where patients have a higher ability to make direct formal and informal payments will continue to exceed those in areas where the population is poor. To bring Tajikistan closer to UHC, it is therefore recommended to:

E1. Provide public coverage for an evidence-based, essential outpatient drug package and expand the regulation of drug prices and drug access A public drug package that makes essential medicines available at subsidized prices—and free of charge for the poor—would curb OOPEs and address inequity in access to medicines for the poor. It would also incentivize more rational use of medicines, which should be strengthened further by stronger regulation of drug access and the prescription practices of public providers. Moreover, a public drug package would allow the government to procure included drugs in bulk at more favorable prices. Generally, a larger degree of drug price regulation is needed to address excessive pricing and price heterogeneity across retailers.

E2. Review fee-exemptions under the public benefit packages for a more effective targeting of the poor. The BBP and Decree 600 exempt a large number of population groups from user fee payments on account of their age, health, and social status—among them the "poor," as certified by subnational authorities. The high rates of health care underutilization among the lower wealth quintiles suggest that the current user fee exemption for the poor is too narrow or does not sufficiently eliminate informal payments to achieve equitable health care access. It is therefore desirable that the poverty targeting is improved to include a larger share of low-income households. Under the tight budget constraints, this may require removing exemptions from higher-income members of some of the currently exempt groups.

E3. Integrate the BBP and Decree 600 and clarify benefits for both patients and providers. The treatments formally covered under the BBP and Decree 600 are now largely identical, and the schemes merely differ in the degree of subsidies granted

with or without referral from PHC providers. In practice, however, implementation varies by locality and facility, depending on available funding and the understanding of benefits among patients and providers alike. It is therefore desirable, that the two schemes are merged, so that de facto benefits can be aligned under a new strategic purchasing mechanism. Moreover, efforts to improve provider and patient awareness of benefits and obligations should be strengthened. This includes strengthening grievance mechanisms for patients who receive poor quality care or are asked for formal or informal payments where care should be provided free of charge.

F. **Use additional health sector funding and savings from the consolidation of facilities and staff to update facility infrastructure and equipment.** An extended public benefit package may not increase utilization if health facilities continue to lack basic infrastructure and equipment. An updated facility masterplan should therefore identify where additional investments are needed most to prioritize government investments. Also, to maximize the return of those investments, it would be worth dedicating a higher share of government health spending to the maintenance and updating of the health sector's capital stock.

Many of the above policy recommendations have been proposed for more than a decade. The above recommendations—raising more public resources for health, reducing supply-side redundancies and increasing capital investments, replacing input-based with strategic purchasing, and extending public health coverage—have been made in World Bank and national policy documents dating back ten years or more and have frequently been reiterated since (World Bank 2008, Ministry of Health 2010, Giuffrida, Msisha, and Barfieva 2013, Government of the Republic of Tajikistan 2016, 2019), including in the draft National Health Strategy of the Republic of Tajikistan 2020–2030.

To support reform processes, systematic stakeholder analysis could form an integral part of government policy and technical assistance. Progress has been particularly slow regarding the securing of a higher share of government spending for health, the consolidation of health staff and facilities, and the transition from input-based to strategic financing. The latter two require fundamental institutional change and all three will produce winners and losers. Those threatened by the changes—ministries of other sectors, redundant health care workers, and facilities and subnational governments benefiting from the current, input-based allocation mechanism—may have more influence than the potential winners. Therefore, successful reforms will need full buy-in from top political and administrative leadership, the forging of alliances among key stakeholders, and compensatory mechanisms for those negatively affected. Facilitating such processes requires a profound and systematic understanding of the country's political economy (Jacobs 2019, Sparkes et al. 2019) and policy-making capacity (Mirzoev, Green, and Van Kalliecharan 2015). Lessons from the political processes of reform from other countries which successfully introduced quasi-independent payer organizations, strategic purchasing, and more comprehensive, primary-care-oriented public benefit packages like the Kyrgyz Republic (Dominis, Yazbeck, and Hartel 2018, Nguyen and Strizrep 2019) or Thailand (Hughes and Leethongdee 2007, Tangcharoensathien et al. 2015) may be instructive. Clear stakeholder mapping and strategic facilitation of reform processes would fundamentally strengthen government policy and technical assistance going forward.

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This Public Expenditure Review updates previous assessments of the levels and efficiency of health financing in Tajikistan and its consequences for healthcare access and health of the Tajik population. Funding for the public healthcare system which provides almost all healthcare remains far short of levels required to provide a universal basic benefit package. As a result, household out-of-pocket payments account for most healthcare spending in the country, and Tajiks frequently forgo needed care for financial reasons. The underfunding of public healthcare in part results from an overall lack of public revenues. It is, however, exacerbated by the health sector enjoying limited priority, with a health share in total government spending far below internationally recognized targets. Inefficiencies in the spending of the limited public funds further undermine the system's ability to provide the population with basic healthcare of appropriate quality. Despite efforts in the past two decades to introduce elements of strategic purchasing and direct a higher share of funding towards primary care, public health financing in Tajikistan still largely follows the centrally planned, hospital-focused, and mainly input-financed Semashko model. The result are substantial regional inequalities in per capita government health spending which reflect differences in health facility and health worker densities rather than healthcare need, a continued overemphasis on hospital and specialist care, and an inability of facility managers to take efficiency-oriented staffing decisions. Key recommendation to address these shortcoming are that a substantially higher share of public revenues be allocated to the health sector, that an independent, single payer organization, a fully-fledged capitation mechanism for primary care and elements of strategic purchasing for inpatient care be gradually introduced, and that current benefit packages are revised and extended to achieve more rational and equitable healthcare utilization. Broad consensus building among stakeholders will be essential for the success of such reforms.

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