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Report No: PAD3175

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$328.00 MILLION

TO THE

REPUBLIC OF INDIA

FOR AN

ANDHRA PRADESH HEALTH SYSTEMS STRENGTHENING PROJECT

April 9, 2019

Health, Nutrition & Population Global Practice  
South Asia Region

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## CURRENCY EQUIVALENTS

Exchange Rate Effective February 28, 2019

Currency Unit = Indian Rupee (INR)

INR 70.75 = US\$1.00

US\$1.41 = INR 100

FISCAL YEAR

April 1 – March 31

## ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
AP	Andhra Pradesh
APMSIDC	Andhra Pradesh Medical Services and Infrastructure Development Corporation
APVVP	<i>Andhra Pradesh Vaidya Vidhan Parishad</i>
ASHA	Accredited Social Health Activist
CHC	Community Health Center
CHFW	Commissioner of Health and Family Welfare
CPF	Country Partnership Framework
DALY	Disability-adjusted Life Year
DH	Directorate of Health
DLI	Disbursement-Linked Indicator
DoHFW	Department of Health, Medical and Family Welfare
DPH&FW	Directorate of Public Health and Family Welfare
e-SC	Electronic Subcenter
EC	Executive Committee
EEP	Eligible Expenditure Program
EHR	Electronic Health Records
ESMF	Environmental and Social Management Framework
FM	Financial Management
GDP	Gross Domestic Product
GoAP	Government of Andhra Pradesh
Gol	Government of India
GRS	Grievance Redress Service
HALE	Healthy Adjusted Life Expectancy
HDC	Hospital Development Committee
HDI	Human Development Index
HNP GP	Health, Nutrition & Population Global Practice

IMR	Infant Mortality Rate
IPF	Investment Project Financing
IVA	Independent Verification Agency
KCC	Knowledge Command Center
MCH	Maternal and Child Health
MIS	Management Information System
MLP	Mid-level Service Provider
MMR	Maternal Mortality Ratio
NCD	Noncommunicable Disease
NHM	National Health Mission
NQAS	National Quality Assurance Standards
OOP	Out-of-Pocket
PDO	Project Development Objective
PforR	Program for Results
PHC	Primary Health Center
PMJAY	<i>Pradhan Mantri Jan Arogya Yojna</i>
PPP	Public-Private Partnership
PPSD	Project Procurement Strategy for Development
QA	Quality Assurance
SAPCC	State Action Plan on Climate Change
SC	Subcenter
SDG	Sustainable Development Goal
SERP	Society for Elimination of Rural Poverty
SPIU	Strategic Planning and Innovations Unit
ST	Scheduled Tribe
STEPS	STEPwise Approach to Surveillance
WHO	World Health Organization

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DATASHEET

**BASIC INFORMATION**

Country(ies)	Project Name	
India	Andhra Pradesh Health Systems Strengthening Project	
Project ID	Financing Instrument	Environmental Assessment Category
P167581	Investment Project Financing	B-Partial Assessment

**Financing & Implementation Modalities**

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Disbursement-linked Indicators (DLIs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
15-May-2019	30-Sep-2024

Bank/IFC Collaboration

No

**Proposed Development Objective(s)**

The Project Development Objectives are to improve the quality and responsiveness of public health services and increase access of the population to an expanded package of primary health services.

**Components**

Component Name	Cost (US\$, millions)
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Improve Quality of Care	2,219.23
Improve Responsiveness of Public Health Services	111.37
Increase Access to an Expanded Package of Primary Health Services	1,109.56

**Organizations**

Borrower:	Republic of India
Implementing Agency:	Department of Health, Medical and Family Welfare, Govt. of Andhra Pradesh

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	3,440.98
<b>Total Financing</b>	3,440.98
<b>of which IBRD/IDA</b>	328.00
<b>Financing Gap</b>	0.00

**DETAILS****World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	328.00
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**Non-World Bank Group Financing**

Counterpart Funding	3,112.98
Local Govts. (Prov., District, City) of Borrowing Country	3,112.98

**Expected Disbursements (in US\$, Millions)**

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025
<b>Annual</b>	0.00	36.16	71.01	84.74	73.34	39.58	23.17
<b>Cumulative</b>	0.00	36.16	107.17	191.91	265.25	304.83	328.00

**INSTITUTIONAL DATA**



**Practice Area (Lead)**

Health, Nutrition & Population

**Contributing Practice Areas**

**Climate Change and Disaster Screening**

This operation has been screened for short and long-term climate change and disaster risks

**Gender Tag**

**Does the project plan to undertake any of the following?**

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Low
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Low
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Low
9. Other	
10. Overall	Moderate



**COMPLIANCE**

**Policy**

Does the project depart from the CPF in content or in other significant respects?

Yes  No

Does the project require any waivers of Bank policies?

Yes  No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12		✓
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

**Legal Covenants**

**Sections and Description**

Project Agreement, Schedule, Section I, Part A, Para 1: the Project Implementing Entity shall maintain through the project period of Project implementation, the Strategic Planning and Innovations Unit (SPIU), which shall report to the principal secretary of DoHFW, and shall be provided with competent, experienced and qualified staff, including technical and safeguards specialists, in sufficient numbers and under terms of reference acceptable to the Bank, and vested with powers, financial resources, functions and competences, acceptable to the Bank, to serve as the focal unit responsible for Project coordination and managing day-to-day tasks for Project implementation.

**Sections and Description**

Project Agreement, Schedule, Section I, Part A, Para 2: the Project Implementing Entity shall appoint, not later than one month after the Effective Date, and thereafter maintain throughout Project implementation, an independent DLI verification agent having qualifications and terms of reference acceptable to the Bank to verify the achievement





of selected DLRs as provided in Schedule 3 to the Loan Agreement.

**Conditions**

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## I. STRATEGIC CONTEXT

### A. Country Context

1. **India continues to be the world's fastest growing major economy.** After growing at 7.2 percent in FY2017/18, the economy expanded by 7.7 percent in the first half of the current fiscal year. This robust performance was underpinned by a revival in industrial activity, strong private consumption complemented by rising investment, and a rise in exports of goods and services. Meanwhile, the external headwinds that characterized the first half of the year have subsided. The dramatic decline in oil prices since October 2018 has allowed the current account deficit to return to relatively benign levels. Likewise, the large portfolio capital outflows that materialized from April 2018 onwards—against the background of current account imbalances and heightened perceptions of emerging markets risk—have eased and capital inflows have resumed, resulting in a stabilization of the exchange rate and bond yields. With the normalization of external circumstances, foreign reserves have remained at around US\$396 billion, which represents a comfortable level, equivalent to about 9 months of imports. Going forward, growth is projected to reach 7.3 percent for the current fiscal year and to firm up thereafter, at around 7.5 percent, primarily because of robust private consumption, a rise in exports of goods and services, and a gradual increase in investments. However, the current account deficit is projected to remain elevated in FY2018/19.

2. **Since the 2000s, India has made remarkable progress in reducing absolute poverty.** Between FY2011/12 and FY2015, poverty declined from 21.6 percent to an estimated 13.4 percent at the international poverty line (2011 purchasing power parity of US\$1.90 per person per day), continuing the earlier trend of robust reduction in poverty. Aided by robust economic growth, more than 90 million people escaped extreme poverty and improved their living standards during this period. Despite this success, poverty remains widespread in India. In 2015, with the latest estimates, 176 million Indians were living in extreme poverty while 659 million, or half the population, were below the higher poverty line commonly used for low- and middle-income countries (2011 purchasing power parity US\$3.20 per person per day). Recent trends in the construction sector and rural wages, a major source of employment for the poorer households, suggest that the pace of poverty eradication may have moderated.

3. **Andhra Pradesh (AP) is the tenth most populous state in India, with an estimated population of 53.6 million and a population density of 304 per km<sup>2</sup>.** Its economy is growing rapidly at 11.6 percent (constant gross domestic product [GDP] growth rate, 2016/17), higher than the national average of 6.7 percent. Its per capita gross state domestic product is about US\$1,932 (2016), and only an estimated 9.2 percent of the population lives below the official poverty line, which is much lower than the national average of 21.6 percent (2011). Approximately 70 percent of the state's population lives in rural areas, and about 17.1 and 5.3 percent of the population comprises scheduled castes and scheduled tribes (STs), respectively. Agriculture is the primary source of income for about 62 percent of the population. Other key sectors in the state include pharmaceuticals, automobiles, and textiles. Overall, the state is doing well in promoting the private sector and ranks first in the Ease of Doing Business index for states in India.



## B. Sectoral and Institutional Context

4. **AP demonstrates a high level of commitment to improving health outcomes.** The state ranks eighth<sup>1</sup> in India on overall health performance on a National Health Index developed by the NITI Aayog, the policy think-tank of the Government of India (GoI). It ranks a slightly higher seventh on the same index when it comes to annual incremental change in performance, indicating that it is not only better than the national average but is also improving rapidly. In FY2017/18, the state allocated 5 percent of its total public expenditure to health, which is higher than the national average of 3.9 percent. As a share of GDP, at 1.1 percent, it is however comparable to the national public spending of approximately 1.15 percent of GDP on health. Its health sector goals, as articulated in its vision document ‘Sunrise Andhra Pradesh - Vision 2029’, is achieving a Human Development Index (HDI) of 0.9 and Healthy Adjusted Life Expectancy (HALE) of 64 years by 2029, a gain of 0.4 points in HDI and 6 years in HALE from 2015.

5. **Maternal mortality ratio (MMR) and infant mortality rate (IMR) have declined significantly, and service coverage has increased in AP<sup>2</sup> over the last decade.** MMR declined from 154 per 100,000 live births in 2004–06<sup>3</sup> to 74 per 100,000 live births in 2014–16 (52 percent reduction). Similarly, IMR declined from 54 in 2005/06 to 35 per 1,000 live births in 2015–16 (35 percent reduction). These declines were better than the national trends for the same period, which showed a 38 percent and 37 percent reduction, respectively. At the same time, coverage of key services increased. Between 2005–06 and 2015–16, institutional deliveries increased from 64.4 percent to 93.0 percent, antenatal care checkups for women in the first trimester of pregnancy increased from 66.1 percent to 82.3 percent, and full immunization increased from 46.0 percent to 65.3 percent.

6. **These trends, while positive, mask emerging and last-mile challenges faced by the state.**

(a) **The public health system is currently not well positioned to address the increasing burden of noncommunicable diseases (NCDs).** NCDs, as a share of AP’s burden of disease, have grown rapidly from 31 percent in 1990 to 60 percent in 2016.<sup>4</sup> Communicable, maternal, neonatal, and nutritional diseases have declined to less than 30 percent. However, like most developing countries, the health system is not geared to address this challenge: treatment at higher-level facilities becomes the default response, as primary-level workers are neither trained nor geared to carry out preventive, promotive care or management of chronic diseases. Additionally, as NCD screening and care is currently only available at secondary level and above, it often results in poorer access.

(b) **Disparities exist in the coverage of maternal and child health (MCH) services and outcomes within the state as well as in the quality of MCH service delivery.**<sup>5</sup> For example, IMR ranges from 48 per 1,000 live births in Srikakulam to 25 per 1,000 live births in Krishna district. Levels of full immunization too range from 77.7 percent in West Godavari district to 47.7 percent in Sri Potti Sriramulu Nellore. Gaps in the quality of service provision remain. For example, while the percentage of women with four or more antenatal care (ANC) visits is

<sup>1</sup> From among all states, except states from north-east India, Goa, and all union territories.

<sup>2</sup> Data from SRS, 2004–06 and 2014–16 and National Family Health Survey (NFHS-3), 2005–06 and NFHS-4, 2015–16.

<sup>3</sup> Data of Andhra Pradesh before its bifurcation in 2014.

<sup>4</sup> India: Health of the Nation’s States - The India State-level Disease Burden Initiative. ICMR, PHFI and IHME, 2017.

<sup>5</sup> Data from NFHS-4, 2015–16 and SRS, 2004–06.



as high as 76.3 percent, full ANC care, which reflects the completeness of the services being delivered, is only 43.9 percent. Furthermore, despite 91.5 percent deliveries taking place in health facilities, MMR is as high as 74 per 100,000 live births, reflecting issues in the quality of care provided in these facilities.

- (c) **Poor quality of care in public health facilities contributes to the lack of confidence in public health services.** As per the National Family Health Survey (NFHS-4), 2015–16, households that do not use government facilities when sick cite quality of care (50.5 percent) as the primary reason for not using government facilities. Other reasons include waiting time too long (37.2 percent), no nearby facility (36.5 percent), facility timing not convenient (34.6 percent), and absence of health personnel (17.8 percent). This is reflected in the lower utilization rates of public health facilities compared to private health facilities. Currently, 64 percent households (2015–16) do not use a government health facility when sick. This is however better than the 74.3 percent in 2005–06.

**7. The state has initiated efforts to address these challenges and strengthen its public health system; however, there are still significant improvements to be made.**

- (a) The state is on the path of quality accreditation for its district and area hospitals, but there is a need to place equal emphasis on quality of care at the primary and basic secondary care facilities. This is especially relevant for enhancing the trust of the population in these facilities, motivating them to access them, instead of bypassing them for higher-level facilities.
- (b) The state has in place an online pharmaceutical and supply chain management system which requires updating to include modern functionality, such as automating inventory management and reducing the reliance on the facility pharmacist to reduce risks of stock outs and increase efficiency.
- (c) The state has several well-established information systems to collect MCH, NCD screening, and individual service delivery data but no integrated information system that would track an individual patient over time or as that patient receives different health services in various locations. This limits the ability of the health system to provide well-informed diagnosis, treatment, and care and the ability of the patient to make informed care-seeking decisions.
- (d) The state employs the use of data for performance benchmarking and managerial accountability but is missing patient feedback on public health services. This is a critical gap, as evidence suggests that using feedback from users of health facilities for peer evaluation and learning lends to the improvement in quality of care and further, making performance data public increases the accountability of the system while also motivating the facility staff to achieve higher standards.<sup>6</sup>

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<sup>6</sup> Fung, C. H., Y. W. Lim, S. Mattke, C. Damberg, and P. G. Shekelle. 2008. "Systematic Review: The Evidence That Publishing Patient Care Performance Data Improves Quality of Care." *Annals of Internal Medicine* 148 (2): 111–23;



- (e) The state engages with the private sector as a complement to the public sector—leveraging private sector know-how and performance incentives as a flexible approach to address service delivery gaps. The state, however, needs to scale up this approach and continue to learn and adjust the contracts to gain the best performance from the service providers.
- (f) The state is focusing on reducing the financial and health risks of the growing NCD burden through insurance and through expanding and strengthening the delivery of primary health care to facilitate access. However, there is also a need to make related services such as access to medication more convenient, have a proactive outreach strategy for high-risk and vulnerable groups that are currently not accessing services, and adopt a disease prevention and management approach to complement NCD screening efforts. While the state has started experimenting with innovative technology solutions and private sector collaboration to address these gaps, there is a need to scale up and strengthen this approach to cover all rural and remote subcenters (SCs) in the state.

8. **World Bank assistance is sought to scale up these efforts, address gaps in quality, improve the focus on results, further innovate, consolidate, and enhance the pace of the state’s achievement in strengthening its public health system.** The public health system is seen to be the key to AP achieving the Health Sustainable Development Goal (SDG 3).<sup>7</sup> Today, a primary health care facility exists for every 5,721 population on average and a secondary/tertiary care facility exists for every 200,000 population in the state. Poor use of these facilities due to inadequate quality of care and lack of availability of services represents a tremendous missed opportunity. Furthermore, public health services are disproportionately used by the poor. For example, while 75 percent of those in the richest quintile deliver in private health facilities, only 36.7 percent from the lowest quintile use private health facilities. Improving public health facilities is thus imperative for ensuring quality health services to all, especially to the poor.

9. A detailed description of the sectoral and institutional context is available in annex 2.

### C. Relevance to Higher Level Objectives

10. **The project is expected to contribute to the World Bank’s twin goals; the health SDG; and the mission of the Health, Nutrition & Population Global Practice (HNP GP).** Project investments in improving the quality and responsiveness of public health services and increasing access of the population to an expanded package of primary health services are expected to contribute to improved health outcomes.

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Herrera, C. A., S. Lewin, E. Paulsen, A. Ciapponi, N. Opiyo, T. Pantoja, G. Rada, C. S. Wiysonge, G. Bastías, S. Garcia Marti, C. I. Okwundu, B. Peñaloza, and A. D. Oxman. 2017. “Governance Arrangements for Health Systems in Low-income Countries: An Overview of Systematic Reviews.” *Cochrane Database of Systematic Reviews* 9: Article No.: CD011085. DOI: 10.1002/14651858.CD011085.pub2.

<sup>7</sup> SDG target 3.1 - By 2030, reduce the global MMR to less than 70 per 100,000 live births.

SDG target 3.2 - By 2030, end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births.

SDG target 3.4 - By 2030, reduce by one-third premature mortality from NCDs through prevention and treatment and promote mental health and well-being.

SDG target 3.8 - Achieve universal health coverage, including financial risk protection; access to quality essential health care services; and access to safe, effective, quality, and affordable essential medicines and vaccines for all.



Health outcomes or good health in early years as well as in adults is an important input into human capital and productivity, contributing to improved earnings<sup>8</sup> and consequently to the World Bank's twin goals of ending extreme poverty and promoting shared prosperity. With its focus on improving and expanding MCH and NCD services and strengthening patient access to health services and drugs by leveraging both public and private providers, the project also contributes to specific SDG targets 3.1, 3.2, 3.4, and 3.8 and lends to the HNP GP's mission of assisting countries accelerate progress toward universal health coverage.

11. **The project is also well aligned to the India Country Partnership Framework (CPF) FY18–22, Report No. 1266667-IN, July 25, 2018, discussed at the Board on September 20, 2018.** By supporting improvements in public health service delivery, this project is directly aligned to the CPF focus area of 'investing in human capital'. More specifically, it directly contributes to the CPF's key objective 3.4 which is 'to improve the quality of health service delivery and financing and access to quality health care'. In doing so, it primarily adopts three of the four catalytic approaches identified as being integral to the implementation of the CPF: (a) engaging a federal India, (b) strengthening public health institutions, and (c) supporting a Lighthouse India. The project also engages the private sector by adopting and taking to scale private sector know-how on technological solutions (such as telemedicine), potentially creating a more robust market for this service.

12. **The project engages a federal India by investing in a comparatively higher-capacity state of AP that will provide lessons for other states.** It adopts an innovative and technologically driven approach to improve access and quality of health services and leverages the private sector in doing so, in addition to systemic improvements to make public health services more responsive to the population. This complements well the Tamil Nadu Health Systems Reform Program which similarly focuses on quality of care and improved management of NCDs and outreach of MCH services but adopts much more of a public institutional strengthening approach. Both projects together and singularly, due to their varied approaches toward achieving similar results, have the potential for tremendous cross-learning across other Indian states and for the national health program.

13. **The project strengthens public health institutions in AP by addressing critical aspects of public health management.** Among the critical aspects of strong management is the generation of quality information and its use in day-to-day management, in policy and strategic decisions, and in the resource allocation process (budget preparation and execution). The project will invest in strengthening public health management and its institutions, specifically supporting many of these core managerial aspects, processes and systems through better data capture and use. More importantly, it will bring in public feedback as a critical input into performance management of public health institutions in addition to routine service delivery data.

14. **The project also supports a Lighthouse India, with knowledge generation and exchange being integral to it.** As a next generation health sector project that leverages technology and the private sector to address the epidemiological transition facing India, the project is likely to have many lessons to share.

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<sup>8</sup> Bleakley, H. 2010. "Health, Human Capital, and Development." *Annu Rev Econom* 2 (September): 283–310. doi:10.1146/annurev.economics.102308.124436.

Mirvis, D. M., and D. E. Bloom. 2008. "Population Health and Economic Development in the United States." *Journal of the American Medical Association* 300 (1): 93–95.

Grantham-McGregor, S., Y. B. Cheung, S. Cueto, P. Glewwe, L. Richter, and B. Strupp. 2007. "International Child Development Steering Group. Developmental Potential in the First 5 Years for Children in Developing Countries." *Lancet* 369 (9555): 60–70.



In line with its innovative nature, studies to assess the effectiveness and impact of the new interventions have been built into the project. Lessons from planned studies will feed back into improved implementation by the state and be documented and disseminated through structured intrastate knowledge-sharing events, making for a lighthouse India.

## II. PROJECT DESCRIPTION

### A. Project Development Objective

#### Project Development Objective (PDO) Statement

15. The PDO is to improve the quality and responsiveness of public health services and increase access of the population to an expanded package of primary health services.

16. More specifically, the project will improve the quality and responsiveness of health services delivered through public facilities including teaching, district, and area hospitals as well as community health centers (CHCs), primary health centers (PHCs), and subcenter (SCs). It will further expand the package of primary health care from the current MCH services to include NCD screening, early detection, and management at the PHCs and SCs.

17. The key PDO-level indicators measuring the three parts of the PDO are:

- (a) Increase in number of CHCs and PHCs with quality certification (quality);
- (b) Increase in the average patient reported experience score (responsiveness);
- (c) Increase in percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at the SC or PHC (access); and
- (d) Increase in the percentage of pregnant women who receive full antenatal care (access).

### B. Project Components

18. **The project is supported by an IBRD Loan in the amount of US\$328.00 million<sup>9</sup> using an Investment Project Financing (IPF) with Disbursement-Linked Indicators (DLIs) lending instrument.** The instrument is well suited for the results-focused approach of the Government of Andhra Pradesh (GoAP) toward public health management and strengthening the institutional capacity of the Department of Health, Medical and Family Welfare (DoHFW) for monitoring and evaluation, financial management (FM), budget execution, and safeguard systems.

19. **The project has three components, each reflecting the three parts of the PDO.** A detailed table of the DLIs supported by each of the three components, as well as the financial allocation, disbursement formulas, targets, detailed definitions, and verification protocols are included in annex 1.

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<sup>9</sup> This amount includes the front-end fee that will be capitalized into the Loan amount.



20. **Component 1: Improve Quality of Care (US\$87.08 million World Bank financing).** This component will focus on improving the quality of care in CHCs and PHCs, which are often the first point of contact in the health system. This will be achieved through incentivizing CHCs and PHCs to achieve state-level and National Quality Assurance Standards (NQAS) certification; establishing a quality tracking dashboard to monitor the maintenance of quality standards at health facilities; supporting the expansion and improved performance of key clinical and non-clinical services provided by private providers at public health facilities; and, improving pharmaceutical stock management system at PHCs and CHCs. These efforts will also lend to strengthening the capacity of facilities to respond to increasing disease incidence due to enhanced climate vulnerabilities. The specific DLIs that will be supported under this component are summarized in Table 1.

- (a) **The component will support an increase in the number of CHCs and PHCs certified as having achieved and maintained quality standards (DLI 1).** In line with the GoAP's strategy, the project will aim to achieve the NQAS for secondary- and primary-level facilities. The NQAS are quality assurance (QA) standards of India's Ministry of Health and Family Welfare for public health facilities and measure quality in eight broad areas, namely service provision, patient rights, inputs, support services, clinical care, infection control, quality management, and outcome.<sup>10</sup> Incentives to motivate and sustain this changed way of functioning are integral to this approach. Financial incentives, both at the individual and facility levels, and nonfinancial incentives in the form of recognition to facilities that achieve the NQAS certification are provided.<sup>11</sup> In addition, the state will expand its focus on National Accreditation Board for Hospitals (NABH) accreditation of area and district hospitals under the project. With the objective of promoting quality, project funds will be released following (i) an increase in the number of PHCs and CHCs with more than a 70 percent quality accreditation score following state-level internal quality assessment, which will signify that the facility is ready for external assessment by the national authorities; (ii) an increase in the number of PHCs and CHCs that achieve NQAS quality certification following the assessment by the national authorities; (iii) the establishment of a quality tracking dashboard that will monitor the maintenance of quality standards and the contracting of quality service providers that will support quality improvement and maintenance across all districts; and (iv) an increase in facilities for which quarterly data is being reported on the quality dashboard.
- (b) **The component will support an increase in the percentage of CHCs that have a core package of clinical and nonclinical services provided by contracted service providers and their improved performance towards quality of care (DLI 2).** A key approach employed by the DoHFW to address gaps in the public health facilities is to purchase services from private providers, filling in or complementing the existing services of public health facilities. Further, the contracts with the private providers are performance-based, including rewards for increased delivery or disincentives for not maintaining service standards. This approach allows for and introduces more flexibility and accountability than otherwise available in the

<sup>10</sup> This includes (a) use of energy-efficient bulbs for lighting; (b) availability of power backup in health facilities, as measures to reduce energy requirements while improving efficiency; and (c) biomedical waste management for improved infection control

<sup>11</sup> Fixed incentive amounts are provided to facilities on the achievement of NQAS certification. Of the incentive amount, 25 percent is meant for individual incentives and 75 percent for staff welfare and improving work environment. Annual incentives of the same amount are provided for maintaining the accreditation.





financing of public health services. With the objective of strengthening engagement of private service providers for improved quality of care, project funds will be released following (i) an increase in the percentage of CHCs that are using performance-based contracts with private service providers to provide a core package of services, contributing to quality of care; and (ii) an increase in the percentage of CHCs achieving at least 90 percent sanitation score monthly, as a tracer indicator for performance-based contract management.

- (c) **The component will support the improvement in the pharmaceutical stock management system at the PHCs and CHCs (DLI 3).** One area central to the delivery of quality health services is for health facilities to have the right pharmaceuticals and other health commodities in sufficient supply to meet the need but not an overstock where there is a risk of expiration. The AP DoHFW has a system to manage the supply chain and inventory at the facility level which operates reasonably well in that facilities generally do not face stock-outs, and if they do, there are provisions in place to seek emergency procurement or reallocate stock from other facilities. To further reduce risks and to modernize the process, project funds will be released following an upgrade of the pharmaceutical inventory management system for use at PHCs and CHCs with advanced management functions, such as automatic flagging of low stock based on the specific formularies for facilities.

Table 1. DLIs under Component 1

DLI	IBRD Allocation (US\$, millions)
1. Increase in the number of CHCs and PHCs certified achieving and maintaining quality standards	54.58
2. Increase in the percentage of CHCs covered by a full set of performance-based private sector service contracts and improved performance of those contracts towards quality of care.	26.25
3. Improvement in the pharmaceutical stock management system at the PHCs and CHCs to reduce stock out risks	6.25
<b>TOTAL</b>	<b>87.08</b>

21. **Component 2 - Improve Responsiveness of Public Health Services (US\$87.50 million World Bank financing).** This component will complement Component 1 by focusing on making public health services more user-friendly and responsive to peoples’ feedback, which is a key element of quality. Responsiveness will be enhanced by rolling out an integrated online patient management system in public health facilities; introducing a policy to empanel private pharmacies to improve access of the government’s free drugs scheme to patients; and, establishing a patient feedback system to assess patients’ overall health facility experience. The specific DLIs that will be supported under this component are summarized in Table 2.

- (a) **The component will support an increase in the number of health facilities with an operational integrated online patient management system (DLI 4).** The introduction of an online patient management or Electronic Health Records (EHR) system will empower citizens by giving them online access to their health records that can be accessed by any public health facility that the patient visits by using their unique ID. It will also enable health staff (doctors and nurses) to provide better diagnosis, treatment, referral, and management through the health system, improving their responsiveness and decision making for patient care. A service provider is currently being contracted to design and manage this system. With the



objective of supporting the phased rollout of the system, project funds will be released following an increase in the number of health facilities with an operational integrated online patient management system.

- (b) **The component will support the empanelment of private pharmacies to dispense state-financed drugs to improve their access to the population (DLI 5).** The GoAP provides state-financed drugs to the population but only through government pharmacies. This is often inconvenient for patients who may have to travel long distances to access these and may end up purchasing them from local private pharmacies at a personal cost, thereby reducing the effectiveness of the scheme to reduce out-of-pocket (OOP) costs. To address this key constraint, especially for chronic NCD outpatients who need medications on a regular basis, project funds will be released following State Cabinet approval of a policy to empanel private pharmacies to dispense NCD-related drugs free of charge to patients. This will enable patients to access drugs at pharmacies—public or private—closest to their home. The rollout of the policy will be monitored and reported as part of the project Results Framework by the Strategic Planning and Innovations Unit (SPIU).
- (c) **The component will support the rollout of a system for measuring and reporting on patient experience (DLI 6).** The system is expected to contribute to improved quality of service delivery by enabling facility performance benchmarking and subsequent improvement by identifying and acting on service gaps based on feedback received from patients and their caregivers. The patient reported experience will be analyzed and reviewed quarterly at the state and district levels, by the SPIU and the District Medical Health Officer, respectively. Both the state- and district-level reviews will provide feedback and assess actions taken by the districts and health facilities, respectively, to improve their performance. With the objective of supporting the operationalization and effective use of this system, project funds will be released following (i) the phased rollout of a system for capturing the feedback of patients at health facilities, (ii) the establishment of a baseline for patient-reported experience in PHCs and CHCs, and (iii) an improvement in the average patient-reported experience from the baseline.

Table 2. DLIs under Component 2

DLI	IBRD Allocation (US\$, millions)
4. Increase in the number of health facilities with an operational integrated online patient management system	49.00
5. Private pharmacies empaneled to dispense state-financed drugs, improving access to the population	6.50
6. Development and implementation of a system for measuring and reporting on patient experience	32.00
<b>TOTAL</b>	<b>87.50</b>

22. **Component 3 - Increase Access to an Expanded Package of Primary Health Services (US\$152.60 million World Bank financing).** This component will focus on expanding the package of services provided at PHCs and SCs to include NCD screening, risk-stratification and management in addition to strengthening the existing MCH services. This will be achieved by introducing and evaluating a technology-based approach to facilitate provision of an expanded package of services at the SC level, including through setting up of functional e-SCs that facilitate tele-consultations and access to drugs; introducing clinical



protocols for NCD screening, risk stratification and management; measuring NCD risk factors and disease prevalence of the population; improving the screening and management of patients diagnosed or having risk of NCDs at SCs or PHCs; and, improving quality and coverage of MCH services at SCs and PHCs. The specific DLIs that will be supported under this component are summarized in Table 3.

- (a) **The component will support an increase in the number of functional electronic subcenters (e-SCs) (DLI 7).** The e-SC is an innovative technology-based approach to facilitate NCD service provision at the SC level to be delivered through contracted private sector providers. It will entail the establishment of a doctors' hub at the regional level with doctors dedicated for tele-consultation at the SC level, a drug vending machine at the SC to dispense drugs based on the doctor's prescription, multi-parameter monitoring equipment to measure basic health parameters, and an information system linked to an integrated EHR system for patient management and trained auxiliary nurse midwives (ANMs) to manage this system. It will contribute to improving health service access by bringing doctors closer to the community and improving the ability of the health system to respond to disease outbreaks, which may be on the rise due to climate change and other factors. It will also help make health centers more energy efficient by adopting solar power as the primary energy source (for centers that are off-grid), thereby reducing the emissions and mitigating for climate impact. With the objective of supporting the effective rollout of this model, project funds will be released following (i) an increase in the number of functional e-SCs, (ii) a cabinet decision and rollout plan for solar-equipped SCs, and (iii) a baseline and end-line study to evaluate the e-SC model.
  
- (b) **The component will support an increase in the percentage of patients diagnosed and at risk of hypertension and diabetes who are managed at the SC or the PHC (DLI 8).** The project will support the strengthening of NCD service provision at the primary level, by introducing management of NCDs (and not just screening) at the PHCs and SCs. It will support the development and introduction of protocols for risk stratification and management based on screening outcomes aimed at promoting NCD management at primary-level facilities closest to the community. It will also invest in capacity building of health staff across facilities on these new protocols and communication campaigns to create awareness on NCD prevention and service availability at the health facilities, targeting both men and women. It will further introduce systems (linked to the EHR) to track their treatment and management in public health facilities. With the objective of promoting effective NCD management at the primary level, project funds will be released following (i) issuance of clinical protocols for NCD screening and risk stratification of patients; (ii) issuance of clinical protocols for treatment and management of hypertension and diabetes at the PHC and SC and referral to higher-level facilities; (iii) completion of the STEPwise Approach to Surveillance (STEPS) Survey on NCDs to inform implementation; (iv) establishment of a baseline of the percentage of patients diagnosed and at risk of hypertension and diabetes, managed according to protocol at PHCs or SCs; and (v) an increase in the percentage of patients diagnosed and at risk of hypertension and diabetes, managed according to protocol at PHCs or SCs.
  
- (c) **The component will support an increase in the percentage of women in the target age group screened for cervical cancer at SCs or PHC facilities (DLI 9).** An active screening



approach involving outreach by ANMs, mobile medical units<sup>12</sup> as well as during regular visits to the PHCs and SCs will be adopted to promote NCD screening among women. Efforts will also be made to create awareness in the community about the relevance of screening, prevention, and management of NCDs. Existing hospital development committees (HDCs) will ensure communication material on NCDs is well displayed at the facilities in the local language and community-level volunteers, called *Sadikara Mitras* under the Society for Elimination of Rural Poverty (SERP), AP will orient village-level women self-help groups and federations under the SERP. With the objective of improving screening coverage, project funds will be released following: (i) an increase in the percentage of women above 30 years of age screened for cervical cancer at SCs or PHC facilities. As cervical cancer is among the leading causes of cancer mortality among women in the state and a key focus of NCD services, it has been used as a proxy measure for screening coverage, which will include cervical cancer screening, breast cancer screening, and others.

- (d) **The component will support an increase in the percentage of pregnant women who receive full ANC<sup>13</sup> (DLI 10).** In addition to making NCD services available at the primary level, the project will also support improvements in the quality and coverage of MCH services. It will do so by including key MCH indicators within the performance-based contracts with e-SC service providers, by focusing on quality of care under Component 1, which will contribute to improving quality of MCH service delivery at the PHC level, and through the placement of a new cadre of trained mid-level service providers (MLPs) at the SC to facilitate provision of an expanded set of services with quality. With the objective of ensuring a focus on last-mile MCH quality and outreach, project funds will be released following an increase in the percentage of pregnant women who receive full ANC.

**Table 3. DLIs under Component 3**

DLI	IBRD Allocation (US\$, millions)
7. Increase in the number of functional e-SCs	68.54
8. Increase in the percentage of patients diagnosed and at risk of hypertension and diabetes who are managed at the SC or the PHC	20.50
9. Increase in the percentage of women in the target age group screened for cervical cancer at SCs or PHCs	30.80
10. Increase in the percentage of pregnant women who received full antenatal care	32.76
<b>TOTAL</b>	<b>152.60</b>

### Project Costs and Eligible Expenditures

23. An assessment of all inputs required to achieve the agreed results was carried out and, on this basis, the project costs are estimated to be US\$3,440.16 million over the project period. The detailed project expenditure boundaries and costs are provided in annex 3. This estimate includes all the investments, service contracts, and ongoing recurrent costs that would go toward improving the quality of care at PHC and CHCs, improving responsiveness of public health services, and strengthening and

<sup>12</sup> The program is called *Chandranna Sanchara Chikitsa*, and the services are provided through a contracted service provider.

<sup>13</sup> Full ANC refers to pregnant women receiving at least four ANC visits and at least one TT injection and taking IFA tablets or syrup for 100 or more days.



expanding service provision at PHCs and SCs. It reflects new and existing AP health sector expenditures that are deemed necessary for achieving the project objectives and is estimated based on an analysis of existing expenditures and a conservative estimate of the increase in health spending that could be expected during the project period based on historical trends.

24. The World Bank financing will reimburse the government up to US\$328.00 million of defined eligible expenditures under the total project cost, based on the verified achievement of the DLIs, as well as payment of the capitalized front-end fee of the Loan. The GoAP will contribute an estimated US\$3,112.98 million in parallel counterpart financing to project results.

**Table 4. Total Project Costs by Component and Total Financing by Source<sup>14</sup>**

Components	US\$, millions					Total
	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	
1. Improve Quality of Care	385.90	412.92	441.82	472.75	505.84	2,219.23
2. Improve Responsiveness of Public Health Services	19.37	20.72	22.18	23.72	25.38	111.37
3. Increase Access to an Expanded Package of Primary Health Services	192.94	206.45	220.90	236.36	252.91	1,109.56
<b>A. Project Cost</b>	598.21	640.09	684.90	732.83	784.13	3,440.16
Of which IBRD Financing	91.03	68.27	106.64	28.19	33.05	327.18
Of which GoAP Financing	507.18	571.82	578.25	704.65	751.08	3,112.98
<b>B. Other Costs (Front-End Fee)<sup>a</sup></b>	0.82					0.82
<b>C. Total Project Cost (A+B)</b>						3440.98
<b>D. Total Financing Required</b>	599.03	640.09	684.89	732.84	784.13	3,440.98
Of which IBRD Financing	91.85	68.27	106.64	28.19	33.05	328.00

Note: a. Calculated as 0.25 percent of the IBRD Project Financing of US\$328.00 million.

25. The major inputs and activities necessary to achieve project objectives and agreed results, as mapped under the DoHFW, AP's standard budget and execution mechanism (based on existing budget holders and expenditure lines in the approved FY2018/19 budget), include (a) service provider contracts for e-SCs, integrated online patient management and patient feedback systems; (b) the maintenance and scale-up of core service contracts (or public-private partnership [PPP] contracts), such as those for sanitation, biomedical waste, diagnostic and lab services, medical equipment maintenance, and teleradiology services aimed at complementing the services of the public health providers; (c) minor refurbishment and equipment needs in CHCs and PHCs to address gaps toward NQAS certification; (d) pharmaceuticals and medical supplies provided to health facilities particularly given the expansion in the

<sup>14</sup> The fiscal year indicated is the Government of India fiscal year.

The estimate of IBRD Financing by fiscal year is the amount of incurred expenditures in that fiscal year that is likely to be eligible for reimbursement based on the expected results. The actual amounts will depend on the pace of implementation. This table does not reflect the disbursement schedule as the reimbursement for results achieved will carry over to the next fiscal year.



scope of services including chronic illness; (e) the operational costs of running the health facilities (SCs, PHCs, and CHCs) delivering the services and improving quality; (f) salaries of the health staff at the CHCs, PHCs, and SCs delivering the services and undertaking the quality improvement activities; (g) incentives to health functionaries such as the Accredited Social Health Activists (ASHAs) used to motivate performance targets such as improved ANC coverage; (h) information, education, and communication to improve outreach; (i) hospital development society (HDS) funds to facilitate their monitoring of provider performance and improving the conditions of facilities, including in response to patient feedback; and (j) monitoring of health sector and implementation of health management information systems (MISs). The detailed project expenditure boundaries and costs table provided in annex 3 includes these budget and execution mechanisms.

26. The Eligible Expenditure Program (EEP), which the World Bank financing will reimburse, based on the verified achievement of the results, is a subset of the total project boundary outlined above and detailed in annex 3. The EEP was defined to ensure that there were an adequate level and consistent flow of funds to justify the release of funds at the time of verified results achievement and to ensure that there was no undue burden on the DoHFW to administer the project. Furthermore, the major service provider contracts that will contribute to results, for example, the e-SC, integrated online patient management and patient feedback systems are now in place or in the advanced stages of procurement following government systems. The project will thus finance the management and monitoring of their rollout and performance by health facility staff. Given this, the corresponding budget codes for salaries of district offices, PHC and SC staff, including support staff, under the Directorate of Health (DH) and Commissioner of Health and Family Welfare (CHFW) were selected as the EEP.<sup>15</sup> The selection of this EEP is consistent with the fiduciary assessments confirming the soundness of the state systems for FM and procurement.

27. In accordance with the World Bank Guidelines on the IPF with DLIs, the financial audit and safeguards compliance will encompass the full project expenditure boundaries detailed in annex 3 and outlined above, which represent all inputs identified as being necessary for the achievement of the PDO.

### **C. Project Beneficiaries**

28. The proposed project will benefit the entire 53.6 million population of AP as it aims to strengthen the state public health system that is accessible to all. The primary focus will be on strengthening the 7,458 SCs, 1,147 PHCs, and 195 CHCs across all 13 districts in the state. Systems will also be strengthened in the 11 teaching hospitals and 47 district and area hospitals in the state. The project will more specifically benefit patients with NCDs as a key focus of the project is expanding the package of primary health services to include NCD screening, detection, and management.

29. The project will also benefit the health sector staff, specifically at the secondary and primary levels, by strengthening their capacity and making additional resources available to achieve the health goals of the state. They will also benefit from training, private sector partnerships, technology solutions, and improved working conditions that will allow them to operate at a higher level and provide better quality care.

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<sup>15</sup> Specifically, the budget codes including all relevant sub-codes are 2210-03-103-04-010, 2211-101-11-04-010, 2210-06-001-03-010, and 2210-06-101-04-010. Should the chart of accounts for these expenditures change during project implementation, the EEP will be updated accordingly.



## D. Results Chain

Challenges	Inputs and Activities	Expected Outputs and Intermediate Results	Expected Outcomes
<ul style="list-style-type: none"> <li>Inadequate quality of services impact population utilization and health</li> <li>Perceptions of quality impact population choice as to where to access services, driving up out of pocket expenditures</li> <li>Gaps in clinical and non-clinical services impact on quality</li> <li>Constraints in monitoring quality and performance for better public health management</li> </ul>	<ul style="list-style-type: none"> <li>Assessments of quality gaps done, and filled, including HR, minor works and equipment</li> <li>Certification of facilities according to national standards organized</li> <li>Maintenance and improvement of quality monitored and incentives provided</li> <li>Service providers contracted and incentivized to improve in clinical and non-clinical gaps</li> <li>Supply chain system upgraded or replaced with modern functionality</li> </ul>	<ul style="list-style-type: none"> <li>Increase in the number of PHCs and CHCs have more than 70 percent quality score, sufficient for seeking national certification <b>(DLI 1)</b></li> <li>Quality tracking dashboard for supporting quality improvement and maintenance established and operational <b>(DLI 1)</b></li> <li>Percentage of CHCs using performance-based contracts with private service providers for supporting quality and the performance of the contracts <b>(DLI 2)</b></li> <li>Improved pharmaceutical stock management system in use at facilities <b>(DLI 3)</b></li> </ul>	<ul style="list-style-type: none"> <li>PHCs and CHCs are certified as achieving national quality standards <b>(PDO and DLI 1)</b></li> </ul>
<ul style="list-style-type: none"> <li>Systems not available to manage patients over time or through referral systems</li> <li>Patients uninformed about their own health and treatment plans</li> <li>Drug dispensing not convenient</li> <li>Community engagement in improving local services limited</li> <li>Feedback from patients on health services at facilities lacking</li> </ul>	<ul style="list-style-type: none"> <li>Development of an integrated online patient management system</li> <li>System enabled to provide patients access to their own health information</li> <li>Information and education activities undertaken for different stakeholders and HDS's re-engaged</li> <li>Policy options considered on dispensing drugs</li> <li>System to collect patient reported experience developed</li> </ul>	<ul style="list-style-type: none"> <li>Increase in the number of health facilities using an operational integrated online patient management system <b>(DLI 4)</b> at patients accessing their own information</li> <li>Private pharmacies empaneled to dispense state-financed drugs to patients <b>(DLI 5)</b></li> <li>Percentage of districts quality committees organizing quarterly review meetings on patient feedback and taking actions to improve service quality</li> <li>System developed and rolled out to measure and report on patient reported experience in a standardized and confidential way <b>(DLI 6)</b></li> </ul>	<ul style="list-style-type: none"> <li>Patient reported experience improves <b>(PDO and DLI 6)</b></li> </ul>
<ul style="list-style-type: none"> <li>Limited availability of doctors particularly in smaller and more remote villages</li> <li>Limited capacity of the health system to produce and retain doctors in remote areas</li> <li>Services provided are not consistent with changing health needs specific to both women and men</li> <li>There is inconsistent quality of existing MCH-focused services</li> </ul>	<ul style="list-style-type: none"> <li>Service providers contracted to upgrade subcenters with teleconsultation doctors, upgrade of facilities, equipment</li> <li>Subcenters provided with solar energy where appropriate</li> <li>Protocols on NCD screening and management developed; and doctors and staff trained on the same</li> <li>Subcenters staffed with 2 ANMs and MLPs</li> <li>Services of subcenters and PHCs expanded to Health &amp; Wellness Concept including service outreach and more capabilities</li> <li>Managers and ANMs target quality PNC</li> <li>Necessary studies, surveys undertaken</li> </ul>	<ul style="list-style-type: none"> <li>Increase in the number of functional e-subcenters, including with solar power energy solution where appropriate and model evaluated <b>(DLI 7)</b></li> <li>Increase in the number of subcenters with trained mid-level service providers</li> <li>Increase in the percent of adult population screened and stratified by risk as per clinical protocols for hypertension and diabetes</li> <li>Increase in the percentage of women above age 30 years screened for cervical cancer at subcenters or PHC facilities <b>(DLI 9)</b></li> </ul>	<ul style="list-style-type: none"> <li>Increase in percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at the subcenter or primary health center <b>(PDO and DLI 8)</b></li> <li>Increase in the percentage of pregnant women who receive full ANC <b>(PDO and DLI 10)</b></li> </ul>

## E. Rationale for Bank Involvement and Role of Partners

30. **India has made great progress in health, but there are still big challenges ahead.** Increasingly, these challenges are not so much about coverage but about quality of health services, scope of primary health care provision, private sector engagement, and quality of management of health institutions. Addressing these challenges requires public administrations at the state level, and specifically the public health sector, to start working differently. This implies transitioning from a public-sector management style focused on individual teams delivering outputs to a more integrated and coordinated public sector effort focused on achieving common health outcomes and striving toward individual, team, and organizational excellence. Leading states like AP are well placed to take on this challenge given their strong commitment, past performance, and present capability. Thus, in the national context of moving toward cooperative and competitive federalism supported by the 2018 World Bank CPF, AP is investing in the next generation of health interventions that will move the frontier of states' institutional capacity further in India. Other states in India will benefit from the lessons that emerge from this next generation of projects and, given some of the technological solutions being introduced under the project, lessons contributing to global knowledge are also likely to emerge.

31. **The World Bank has a long engagement in the Indian health sector, supporting both national-level programs and specific state-level initiatives,** as well as policy dialogue and analytical work in specific



areas covering public health, health financing, and service delivery. Each of these investments has supported the strengthening of public health systems, improvement in programmatic design, and the introduction of new approaches based on global and national lessons. The World Bank support to the AP health sector started with the Andhra Pradesh First Referral Health System Project (1995–2002), which focused on improving quality, effectiveness, and coverage of health services at the secondary level and was successful in improving infrastructure of district, area, and community hospitals and strengthening systems for their management. The Andhra Pradesh Economic Restructuring Project (1998–2007) complemented these efforts through investments in strengthening monitoring and drug supply chain management systems in the health sector. The state now seeks World Bank support to lend to the achievement of its health sector vision and SDG 3 by expanding the scope of its primary care services and scaling up innovative use of technology and private sector engagement toward the attainment of health outcomes.

32. **The World Bank is well positioned to respond to this request given the project’s potential contribution to global knowledge on health service delivery and its alignment with the World Bank Health, Nutrition & Population Global Practice’s mission of assisting countries accelerate progress toward universal health coverage.** Furthermore, by investing in health care, the proposed operation is expected to contribute to the World Bank’s twin goals of ending extreme poverty by 2030 and promoting shared prosperity among the poorest 40 percent. It will also contribute to the achievement of SDG 3 (Good Health and Well-being) targets 3.1, 3.2, 3.4, and 3.8. The World Bank will also not only be able to bring to bear global knowledge on NCD screening and management and performance-based contracting but also be able to facilitate knowledge generation and exchange on innovative technology-enabled service delivery solutions and health sector management based on the experience of the project.

33. **There are no active development partners working specifically with AP to achieve its broader health sector development agenda.** The state has, however, initiated several partnerships, through Memorandums of Understanding with several academic and professional institutions such as Administrative Staff College of India and the Postgraduate Institute of Medical Education and Research, Chandigarh. The World Health Organization (WHO) also provides technical guidance to the state based on specific requests. For example, at the request of the DoHFW, WHO undertook an evaluation of the performance of its service contracts on diagnostic services. These partnerships will be leveraged in supporting the project, especially their role as external evaluators of different aspects of the program.

#### **F. Lessons Learned and Reflected in the Project Design**

34. **The design of the project has benefited from lessons of the World Bank’s engagement in the health sector globally and similar interventions in India.** The focus on enhancing quality of care adopting simplified accreditation approaches (such as NQAS, which has been developed for public health facilities in the Indian context) and leveraging the private sector by contracting services have been found to be feasible, cost-effective, and successful in achieving desired results. Other state projects in India, such as the Uttar Pradesh and Karnataka Health Systems Strengthening Project lend to these lessons. In addition, emphasis has been placed on building valid and reliable information systems, including capturing patient-





reported experience for feeding back into service delivery improvement, based on global lessons on approaches that facilitate achievement of quality of care and patient-centeredness.<sup>16</sup>

35. **The project also draws on the experience of tackling NCDs in low- and middle-income countries in its design.** It considers global evidence that suggests patients with NCDs that require care over a long period can only be delivered equitably through health systems based on primary health care.<sup>17</sup> Furthermore, the project adopts a total risk approach to screening for NCDs, whereby tools to enable early detection of a common set of diseases is administered to those visiting the PHC. Cost-effective methods of screening, such as visual inspection with acetic acid, are being adopted as the appropriate option. Furthermore, to avoid the pitfall of focusing on screening while missing out on management of the disease, a clear results focus has been placed on management of those identified as ‘at risk’.

36. **It further adopts an iterative ‘learning-by-doing’ approach for the new technology-based interventions being rolled out.** Operations research has been built into the project to enable learning during implementation to strengthen the intervention design.

### III. IMPLEMENTATION ARRANGEMENTS

#### A. Institutional and Implementation Arrangements

37. **The AP DoHFW will be responsible for the implementation of the project.** The existing DoHFW governance and management structures and departments will be used for project implementation. The DoHFW Executive Committee (EC) under the Chairmanship of the Principal Secretary, DoHFW, will provide oversight of the project. The EC consists of all relevant departments and agencies of the health sector administration. The SPIU, which reports to the Principal Secretary, will be responsible for project management and coordination.

38. **The Principal Secretary, DoHFW, will be the Project Director and the Director, SPIU, will be the Project Coordinator, responsible for managing day-to-day tasks for project implementation and will report to the Principal Secretary, DoHFW.** Given the results focus of the project, which requires coordinated action by directorates within the DoHFW, the designation of the Principal Secretary, DoHFW, the senior-most official within the department, as the Project Director is critical to effective implementation. Further, to support day-to-day operations, results monitoring, and administrative reporting requirements, the SPIU will ensure staffing relevant to the core needs of the project. Specifically, to oversee and monitor environmental and social safeguards, focal points at the state and within the district quality assurance teams will be designated. As the project will be implemented through the routine budget and execution mechanisms of the sector, the quarterly financial reports will be prepared

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<sup>16</sup> Kruk, M. E., A. D. Gage, C. Arsenaault, K. Jordan, H. H. Leslie, S. Roder-DeWan, O. Adeyi, P. Barker, B. Daelmans, S. V. Doubova, M. English, E. G. Elorrio, F. Guanais, O. Gureje, L. R. Hirschhorn, L. Jiang, E. Kelley, E. T. Lemango, J. Liljestrand, A. Malata, T. Marchant, M. P. Matsoso, J. G. Meara, M. Mohanan, Y. Ndiaye, O. F. Norheim, K. S. Reddy, A. K. Rowe, J. A. Salomon, G. Thapa, N. A. Y. Twum-Danso, M. Pate. 2018. “High-quality Health Systems in the Sustainable Development Goals Era: Time for a Revolution.” *The Lancet Global Health*.

<sup>17</sup> Package of Essential Noncommunicable (PEN) Disease Interventions for Primary Health Care in Low-Resource Setting. Geneva: World Health Organization; 2015.

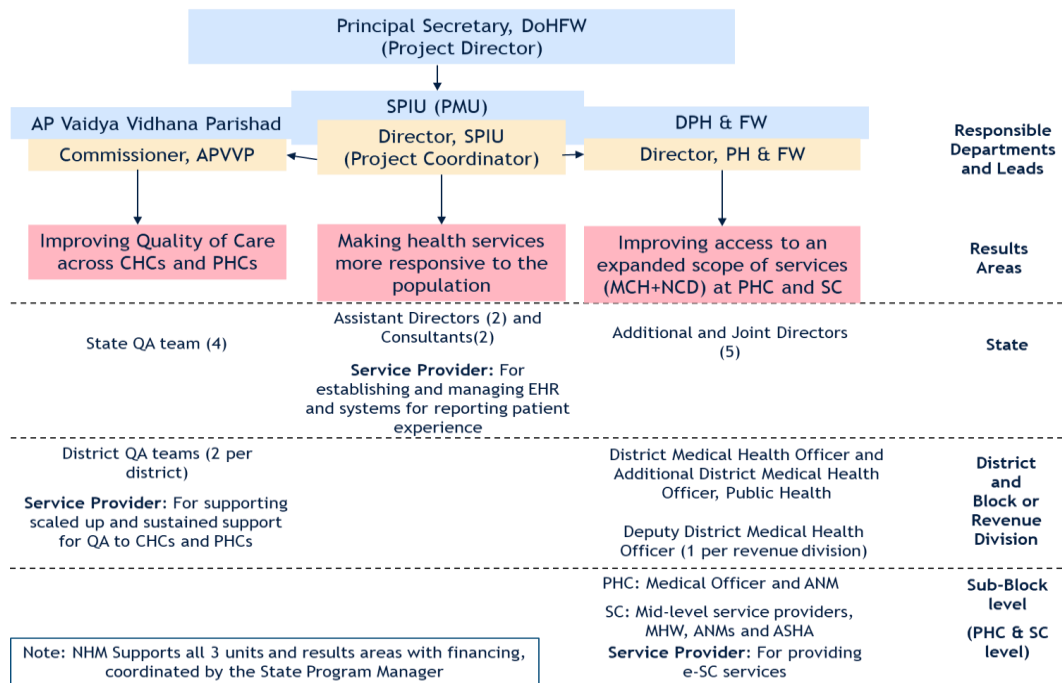
WHO Global Action Plan on the Prevention and Control of Noncommunicable Diseases 2013–2020. Geneva: World Health Organization; 2013.



by the finance staff responsible for financial reporting within the SPIU. Procurement, in turn, will be undertaken by the Andhra Pradesh Medical Services and Infrastructure Development Corporation (APMSIDC) with guidance on technical terms of reference and scope of work from the SPIU and related directorates.

39. **In line with the existing implementation structure and programmatic responsibilities within the DoHFW, there are three directorates that will primarily contribute to the achievement of project results:** the *Andhra Pradesh Vaidya Vidhan Parishad (APVVP)*, the SPIU, and the Directorate of Public Health and Family Welfare (DPH&FW). The APVVP, which is responsible for managing secondary-level health facilities and ensuring quality of care across facilities, will lead implementation of activities contributing to improved quality of care (Component 1). The SPIU, which is responsible for planning, monitoring, and analyzing data from the multiple data sources within the DoHFW for informed decision making, will lead implementation of activities aimed at making health services more responsive to the population (Component 2). In addition, it will coordinate overall project implementation and track results. Finally, the DPH&FW, which is responsible for all activities related to preventive, promotive, and curative services at the primary and secondary levels, will lead implementation of activities contributing to improved access to an expanded scope of services (Component 3). Under each of the three directorates, there are specific administrative staff, teams, health facility staff, and contractors at the state, district, block, and sub-block levels that will be involved in delivering the project results. Additionally, the National Health Mission (NHM), coordinated by the State Program Manager, will provide support and financing (according to a co-financing share of 60-40 national-state government) to all three implementing directorates. The project implementation arrangements are shown in Figure 1.

**Figure 1. Project Implementation Arrangements**





40. **The SPIU will also be responsible for documenting and disseminating lessons learned in implementation.** The focus will be on capturing knowledge through operations research on the innovative e-SC model and documenting lessons in private sector engagement for improving public health services. Research findings and case studies will be disseminated to other states through knowledge exchange events and globally through publications, providing valuable inputs to others implementing similar initiatives.

## **B. Results Monitoring and Evaluation Arrangements**

41. **The DoHFW will lead the results monitoring and evaluation arrangements of the project.** Within the DoHFW, the SPIU will provide overall monitoring, reporting, and benchmarking of the sector performance through an integrated dashboard that draws on information from different existing and new data sources to be introduced through the project. Information on the project Results Framework will be drawn from this dashboard. The project Results Framework includes indicators that are (a) already available from the administrative data sources; (b) planned to be available with the upgrade of information systems supported by the project, such as the establishment of quality tracking dashboards and patient-level health records; and (c) important milestones of progress in deciding and rolling out priority program interventions. Reporting on the indicators does not rely on survey data, although the project does incentivize the completion of a few key surveys as important process indicators.

42. **Given that the project is an IPF with DLIs, the SPIU will contract the third-party independent verification agency (IVA), with qualifications and terms of reference acceptable to the World Bank.** The IVA will carry out the verification of achievement of all the disbursement-linked results (DLRs), in accordance with the verification protocol, except for DLR 7.3 and DLR 8.2 (a), which will be verified directly by the World Bank. The IVA will be sufficiently familiar with the public health system in India and have adequate capacity to be able to provide a sound evaluation of two types of indicators: (a) process indicators; and (b) indicators measuring improved provider capacity (that is, functional e-SCs and operational information systems) and service delivery (screening and management for NCDs as well as full and quality ANC) which will require field-level assessments of a sample of facilities to confirm if the service capability or service delivery is as described in the regular reports. As the entity responsible for reporting on results, the SPIU will compile the data on results and evidence of DLIs' achievement for submission to the IVA and the World Bank.

43. **The SPIU will also coordinate the implementation of a STEPS survey on NCDs and an evaluation of the e-SC model, both of which are DLRs under the project.** A third-party organization will be engaged to undertake a baseline and end-line evaluation of the innovative e-SC model (DLR 7.3(a) and (b)). The evaluation will provide useful lessons on several key constraints that most other states of India as well as many countries are facing such as inability to produce and retain doctors in remote areas, task-shifting to nurses and community health workers, and expanding access to NCD services to both men and women from a service platform initially focused on MCH services. In addition, the project will support the implementation of a STEPS NCD risk factor surveillance (DLR 8.2 (a)) that measures (a) NCD risk factor and disease prevalence in the adult population; (b) knowledge of the health status; (c) current health usage patterns; and (d) ability to manage and control the disease, if known and accessing health services. This will be a valuable tool for improving the targeting of the population screening programs to target groups, geographical areas, and other factors based on the risk factor and disease prevalence. It will also help establish reasonable targets for identifying the population at risk that require more and better access to



care to manage their health before complications or a catastrophic event arises. As another southern state, Tamil Nadu, will also be undertaking a similar exercise around the same time, the World Bank team will facilitate knowledge sharing across the states in both the methodology of the survey as well as using the results for targeting its program interventions. These surveys are built into the project design and, therefore, will be financed by the DoHFW. The SPIU will coordinate the undertaking of the surveys in consultation with the other technical departments.

### C. Sustainability

44. **The state has demonstrated political leadership and government ownership for improving the health system in AP.** As described in the Sectoral and Institutional Context, the state aims to gain 0.4 points in HDI and 6 years in HALE from 2015 to 2029 by strengthening its public health system to make it citizen-centered, responsive, and capable of delivering quality services. Its ranking on the National Health Index (the state ranks eighth in India on overall performance) and budget allocation for the health sector (5 percent of total public expenditure on health versus the national average of 3.9 percent) also demonstrate the state's commitment to an improved health system. More importantly, the state has already initiated several interventions and pilots to address some of the gaps in the health system and is committed to expanding them. The World Bank funding will support the state to implement its vision and expand its programs.

45. **The project will leverage the state's own systems and processes rather than introducing parallel mechanisms, and build capacity, thus enhancing the sustainability of the interventions.** The project uses the state's existing structures for implementation and budget allocation, and the project will rely on the state for standard setting and updating of protocols and for implementation. Additionally, through DLIs, the project incentivizes the establishment of standards, protocols, and systems, including better information management that facilitates evidence-based decision making. By establishing personalized health records and supporting systems for citizen engagement and feedback, the achievements of the project can be sustained beyond the project's horizon.

46. **Furthermore, the economic impact of strengthening primary care in AP is expected to be manageable.** The successful prevention and management of NCDs at the primary care level merely reflects redistribution from higher levels of care within the health system and will likely save resources that would otherwise be spent in providing specialist care at the secondary or tertiary level. In addition, based on calculations detailed in the economic analysis, the estimated additional costs from the program would amount to approximately 9 percent of the annual health budget.

## IV. PROJECT APPRAISAL SUMMARY

### A. Technical, Economic and Financial Analysis

#### Technical Analysis

47. **AP has a well-established public health system and has made substantial progress in improving its health outcomes.** Yet, issues of quality prevent the state from achieving the last-mile targets. As highlighted in the recent Lancet Global Health Commission on High Quality Health Systems in the SDG



Era,<sup>18</sup> in countries where health systems are in place, poor-quality care is a bigger barrier to reducing mortality than insufficient access. In AP, a clear illustration of inadequacy of health care quality is a high MMR of 74 per 100,000 live births despite near universal, 93 percent, institutional deliveries.<sup>19</sup> Focusing on quality of care is thus the right approach. Globally, there is consistent evidence that shows that accreditation programs improve the process of care and improve clinical outcomes of a wide spectrum of clinical conditions.<sup>20</sup> Furthermore, the Lancet Commission suggests that if learning systems are built in, the potential for improvement increases. With the establishment of quality dashboards and systems to capture patient reported experience, to be used for peer learning and performance management, the project is on the right track towards creating a supportive learning environment. Moreover, by making public the quality and patient experience scores once the system is established, it is lending to an improvement in the accountability of the system, while also motivating the facility staff to achieve higher standards.<sup>21</sup> Overall, by strengthening data systems the project recognizes that valid and reliable information is a necessary input to high-quality health systems.

**48. Evidence on private sector engagement to support improvement in quality of care is more mixed.**<sup>22</sup> However, what is clear is that the private sector may be better placed than the government to deliver certain services and should be engaged within a planned regulatory framework that does not lead to increased OOP expenditures for citizens. The principal approach of engaging the private sector to be adopted under the project is contracting in services, so that private service providers are engaged to manage or directly deliver services within existing government facilities. The evidence for using this approach is strong, indicating that contracting can be effective in increasing access and use of services. A systematic review<sup>23</sup> also found that contracting had the potential to increase equity of care.

**49. The focus on NCDs and PHCs as the avenue for management of NCDs is in line with recommended practice.** AP today faces an epidemiological transition, wherein NCDs constitute 60 percent of the disease burden of the state. Communicable, maternal, neonatal, and nutritional diseases constitute 27 percent, and about 13 percent is from injuries. The increase in NCDs, which reflects chronic

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<sup>18</sup> Kruk et al. 2018.

<sup>19</sup> High mortality rates for treatable causes, such as injuries and surgical conditions, maternal and newborn complications, cardiovascular disease, and vaccine-preventable diseases showcase the need for investing in quality of care.

<sup>20</sup> Devkaran and O'Farrell. 2015. *BMC Health Services Research* 15: 137. DOI 10.1186/s12913-015-0784-5; Pomey, M., L. Lemieux-Charles, F. Champagne, D. Angus, A. Shabah and A. Contandriopoulos. 2010. "Does Accreditation Stimulate Change? A Study of the Impact of the Accreditation Process on Canadian Healthcare Organizations." *Implementation Science* 5: 31; Alkhenizan, A., and C. Shaw. 2011. "Impact of Accreditation on the Quality of Healthcare Services: A Systematic Review of the Literature." *Annals of Saudi Medicine* 31 (4): 407–16. doi:10.4103/0256-4947.83204.

<sup>21</sup> Fung, C. H., Y. W. Lim, S. Mattke, C. Damberg, and P. G. Shekelle. 2008. "Systematic Review: The Evidence That Publishing Patient Care Performance Data Improves Quality of Care." *Annals of Internal Medicine* 148 (2): 111–23; Herrera, C. A., S. Lewin, E. Paulsen, A. Ciapponi, N. Opiyo, T. Pantoja, G. Rada, C. S. Wiysonge, G. Bastías, S. Garcia Marti, C. I. Okwundu, B. Peñalozza, and A. D. Oxman. 2017. "Governance Arrangements for Health Systems in Low-income Countries: An Overview of Systematic Reviews." *Cochrane Database of Systematic Reviews* 9: Article No.: CD011085. DOI: 10.1002/14651858.CD011085.pub2.

<sup>22</sup> Montagu, Dominic, Catherine Goodman, Peter Berman, Amy Penn, and Adam Visconti. 2016. "Recent Trends in Working with the Private Sector to Improve Basic Healthcare: A Review of Evidence and Interventions." *Health Policy and Planning* 31 (8): 1117–32. <https://doi.org/10.1093/heapol/czw018>;

Hallo De Wolf, A., and B. Toebes. 2016. "Assessing Private Sector Involvement in Health Care and Universal Health Coverage in Light of the Right to Health." *Health and Human Rights* 18 (2): 79–92.

<sup>23</sup> Liu, X., D. Hotchkiss, and S. Bose. 2008. "The Effectiveness of Contracting out Primary Health Care Services in Developing Countries: A Review of the Evidence." *Health Policy Plan* 23: 1–13.



and often complex conditions, requires highly skilled, longitudinal, and integrated care and greater reliance on good health care. Such care is also needed to address the substantial residual mortality from maternal and child conditions and infectious disease. This, on the one hand, highlights the need and relevance of focusing on quality of care, while on the other, ensuring the health system is capacitated to manage the increasing scale of NCDs. The most feasible, affordable, and equitable option for reaching people in need of health care for NCDs is through the primary health care system.<sup>24</sup> Thus, by adopting the approach of screening, identification, and management of ‘at risk’ people through the PHCs, the project is following best practice.

**50. The use of technology solutions, such as telemedicine to improve quality and outreach of services, is pushing the boundaries in health care delivery.** Telemedicine has been found to be an effective tool for delivering more frequent and timely health care to people with chronic conditions at a distance and for improving access to health care.<sup>25</sup> Telemedicine also has the potential to overcome health care disparities in the underserved areas.<sup>26</sup> One limitation highlighted in a study was that while patients reported higher patient satisfaction, there were larger losses to follow up among the telemedicine group compared to those who received usual care.<sup>27</sup> The project takes some of these lessons into account in designing the telemedicine model, where it retains the role of the health workers or ANMs as the primary health care agents at the facility responsible for following up on patients, especially those that are identified ‘at risk’ for NCDs and need active management.

**51. In summary, the proposed approach is supported by evidence, promotes technological innovation and good practice, and is expected to contribute to the AP health system moving to the next frontier.** The project is also expected to yield lessons for other states within India and globally.

### Economic and Financial Analysis

**52. The economic and fiscal analysis suggests that the project would improve equitable access to healthcare and support an efficient approach to improving health outcomes.** The WHO’s guideline on thresholds for acceptable costs per DALY averted<sup>28</sup> confirm that the proposed interventions for screening and management of some of the targeted NCDs are cost-effective. Additionally, a cost-benefit analysis shows that the project will only have to achieve an average of 289,000 DALYs saved annually to ‘break even’, which is well surpassed through its estimated outreach of over 70 million outpatient contacts per year through the planned 6,190 e-SCs. Finally, the project is not expected to create unmanageable budgetary liabilities as additional expenses it generates would amount to approximately 9 percent of the annual health budget. The detailed analysis is presented in annex 4.

<sup>24</sup> WHO Global action plan on the prevention and control of noncommunicable diseases 2013–2020. Geneva: World Health Organization; 2013.

<sup>25</sup> Flodgren, G., A. Rachas, A. J. Farmer, M. Inzitari, and S. Shepperd. 2015. “Interactive Telemedicine: Effects on Professional Practice and Health Care Outcomes.” *Cochrane Database of Systematic Reviews* 9: Article No.: CD002098. DOI:10.1002/14651858.CD002098.pub2.

<sup>26</sup> Mathur, P., S. Srivastava, A. Lalchandani, and J. L. Mehta. 2017. “Evolving Role of Telemedicine in Health Care Delivery in India.” *Prim Health Care* 7: 260. doi:10.4172/2167-1079.1000260.

<sup>27</sup> Bowles, K.H., A. L. Hanlon, H. A. Glick, M. D. Naylor, M. O’Connor, B. Riegel, et al. 2011. “Clinical Effectiveness, Access to, and Satisfaction with Care Using a Tele Homecare Substitution Intervention: A Randomized Controlled Trial.” *International Journal of Telemedicine & Applications* 2011: 1–13.

<sup>28</sup> Horton, S. 2017. “Cost-Effectiveness Analysis in Disease Control Priorities, Third Edition.” In *Disease Control Priorities (third edition): Volume 9*, edited by D. Jamison, H. Gelband, S. Horton, P. Jha, and R. Laxminarayan. Washington, DC: World Bank.



## **B. Fiduciary**

### **(i) Financial Management**

53. The project's fiduciary systems provide reasonable assurance that financing proceeds will be used for intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. This is based on a fiduciary systems assessment that was carried out in preparation of the project and which evaluates the state systems for budgeting, funds flow, payment, accounting, and auditing.

54. The program funds will flow through the budget lines of the health directorates as per systems and procedures of the GoAP. Payments will be made by the Treasury upon presentation of bills by the Drawing and Disbursement Officers of the directorates. The transactions will be recorded by the Treasury against specific budget heads and will be submitted to the State Accountant General (Accounts and Entitlements) for compilation of finance and appropriation accounts. In case companies, boards or societies participate in the project implementation, they will draw funds from the Treasury into their bank account. Payments will be made by these agencies on delivery of services, and expenditures will be recorded in the existing accounting system, according to existing internal guidelines and procedures. Utilization certificates will be submitted by these agencies to the directorate upon completion of the activities.

55. The FM function of the project will be led by the SPIU, which (like any other department in AP) is staffed with officers seconded from the State Finance Department. The staff will ensure accounting, payments, reporting, and audit requirements of the project are complied with.

56. **Audit arrangements.** The World Bank will rely on the existing audit mechanisms of the GoAP. The audit report of the Comptroller and Auditor General on the state accounts along with appropriation accounts of the Accountant General (Accounts and Entitlements) that provide spending of the Health Directorate (classified according to 'sub-head' and 'sub-detailed head') on the agreed budget lines (that is, covering the entire project boundaries) will be shared by the project with the World Bank by March 31 each year (that is, within 12 months from the end of each fiscal year of April to March) after these audit reports are presented in the state assembly in the ensuing budget session.

57. **EEP.** According to the World Bank requirements, a subset of total expenditure would be defined as 'Eligible Expenditures', against which the World Bank financing will be released on verified achievement of results. In discussion with the DoHFW, salaries of district offices, PHC, and SC staff, including support staff, were identified as the EEP.

58. **Reporting arrangements.** During implementation, the DoHFW will report to the World Bank within 45 days of every fiscal year semester on the EEP for release of the World Bank financing, upon verified achievement of results. The funds will be disbursed by the World Bank to the GoI under IBRD loan terms, which in turn will be released by the GoI to the GoAP as per agreed financing norms between the Central Government and State Government.

59. **Retroactive financing.** The project provides for retroactive financing starting from October 1, 2018, in the amount up to US\$30 million for expenditures that will be made toward project results achieved before the expected signing of the Project's Loan Agreement in June 2019.



## **(ii) Procurement**

60. On the basis of the defined EEP, the project does not intend to directly finance any procurements of works, goods, and services (consultancy services and non-consultancy services). Procurements under the project, not reimbursed by the Loan, will be carried out by the GoAP following country procurement systems. The systems are to ensure that the goods, works, non-consulting services, or consulting services procured are of a satisfactory quality, compatible with the other elements of the project, consistent with the project objectives, delivered or completed on time, and priced so as not to have an adverse effect on the economic and financial viability of the project.

61. Should the definition of the EEP change during project implementation, any goods, works, non-consulting services, and consulting services financed by the Loan proceeds shall be procured in accordance with the World Bank Procurement Regulations for IPF Borrowers, dated July 1, 2016 (revised in November 2017, August 2018), referred to as the Procurement Regulations. In such an event, the implementing agency will prepare a Project Procurement Strategy for Development (PPSD). The PPSD will be based on the nature of procurement activities, capacity of the procuring organization, prevailing market conditions, activity-level risks, and so on. It will spell out the procurement arrangements for the project (for example, procurement packaging strategy, method, bid evaluation methodology of the major procurement packages, time line for procurement activities, and contracting arrangements) and will include risk mitigation measures. As an outcome of the PPSD, a Procurement Plan shall be prepared, and the other major high-value procurement packages required in the project will also be identified.

62. Procurements under the project will be carried out by the APMSIDC, which is registered under A.P. Public Societies Act 1930 in 1984 and is headed by a Chairman and constitutes a Managing Director along with a Chief Engineer at Headquarters. It has three circles headed by Superintending Engineers and 13 divisions headed by Executive Engineers spread over in the state with one division in each district. The main functions of the APMSIDC are construction and maintenance of hospital buildings and procurement and distribution of drugs, consumables, and equipment for the DoHFW. It also has a central drug store in each district headquarters managed by the Executive Engineer and assisted by two pharmacists for distribution of drugs and so on to various hospitals in the district. The APMSIDC functions on a no-profit and no-loss basis. It follows the AP financial codes, which has a chapter on stores and works, and has established procurement guidelines, procurement manual, and standard bidding documents approved by the competent authority. The APMSIDC has been successfully carrying out the previously outlined procurements for a long time and has experience in implementing procurements under World Bank projects. The APMSIDC uses e-procurement system for all its procurement.

63. Given the existing procurement capacity of the state and the definition of the EEP, the procurement risk is rated Low.

## **C. Safeguards**

### **(i) Environmental and Social Safeguards**

64. **The project triggers OP 4.01 - Environmental Assessment, OP 4.10 - Indigenous Peoples and OP 4.11 - Physical Cultural Resources.** The current project design does not have major indirect or long-term impacts on the environment or social aspects, and hence, the project is assessed to be Category B. No





new large-scale construction activity is envisaged and any revamping of health facility infrastructure and processes that includes minor repairs, refurbishments, and renovations will be done in the existing premises of the health care facilities. The World Bank Group Environmental Health and Safety guidelines will also be applicable in all service contracts for biomedical waste management and sanitation. The presence of STs in the project area triggers OP 4.10. The state is divided into 13 districts with the presence of STs varying across these districts. Further, five districts have blocks/agencies identified as Schedule Areas as per the Andhra State Order (Cesser), 1955, and A.P. Reorganization Act, 2014.

65. **An Environmental and Social Management Framework (ESMF) has been prepared under the project, in accordance with OP 4.01 Category B project requirements.** The ESMF ensures appropriate assessment and mitigation of potential adverse risks and impacts and outlines steps to be followed by the borrower in mitigating potential adverse impacts associated with the project. It also outlines a tribal development plan in compliance of OP 4.10 and details the appropriate institutional arrangements and coordination needed for environmental and social safeguards management. It additionally maps existing mechanisms to redress grievances, feedback mechanisms, and beneficiary engagement, both at the state level and across primary and secondary health care facilities.

66. **Under Component 1, the project will focus on improving quality of health services, which includes systems for waste management.** The improvement in quality of services is likely to increase the number of patients using the facilities, thus generating incremental increase in biomedical waste (clinical and infectious waste materials, needles and sharps, and wastewater) and other wastes (solid waste, e-waste, plastic waste, and hazardous waste). This potential increase in waste will be addressed by contracting or purchasing services from the private sector to provide sanitation and biomedical waste management and medical equipment maintenance, which are critical in ensuring good worker health and safety practices. Through the safeguards processes, the project will focus on occupational health and safety practices of workers such that they are provided with appropriate personal protective equipment, immunizations, health check-ups, and trainings on medical waste handling and infection control measures. The ESMF outlines the process to be followed to ensure that all solid and liquid waste streams are adequately managed, treated, and disposed of even if they are not connected to central treatment facilities. OP 4.11 is triggered as a preventative measure. All minor civil and renovation works will be restricted to already existing HCF premises. However in the event of unknown physical cultural resources within the area, the ESMF includes measures for screening and avoiding and impacts on these physical cultural resources as well as chance-find procedures in the event new resources are discovered in the course of project implementation. The social safeguards processes will strengthen basic facilities at the PHC and SC levels through identification and monitoring of basic provisions (drinking water, seating space, and adequate lighting) to enhance overall user experience, particularly in tribal and rural areas.

67. **Under Component 2, systems to capture patient-reported experience will be established to feed back into facility improvement.** In addition to this, the ESMF recommends development of information, education, and communication material in audiovisual and interactive format and in local dialects for generating awareness especially among the illiterate population and vulnerable and marginalized groups. The ESMF further recommends strengthening the existing state Grievance Redress Mechanism to capture grievances and complaints across facilities and districts, evaluate patterns, and enhance the user experience of health care.



68. **Under Component 3, the scope of services provided at PHCs and SCs will be expanded to include NCD prevention, screening, and management.** Based on field visits and interactions with stakeholders during the ESMF preparation process, information asymmetries related to NCDs was identified as a gap at the community level. This is amplified across the state for women and men, given geographical variations, literacy levels, dependence on daily wage work, and other external factors. To address this gap, the ESMF includes actions to create awareness among village health committees and orient women's self-help groups under the SERP on basic symptoms of NCDs (hypertension, cardiovascular diseases, diabetes, cervical cancer, prostate cancer, and so on) and information related to NCD screening for effective engagement and flow of information at the community level.

69. **The draft ESMF was consulted upon at the district and state levels during the development of the instrument and before its disclosure with relevant stakeholders and government institutions.** The final ESMF, incorporating feedback from the consultations was disclosed in-country on February 26, 2019, on the website of AP Health Department (website: <http://hmfw.ap.gov.in/>). It was also disclosed in the World Bank's InfoShop on February 26, 2019. The executive summary of the document was translated in the local language and made public at the local level. The district-level consultation process was especially sensitive to the needs of the tribal population, and specific efforts were undertaken to ensure adequate representation from tribal communities, civil society organizations working on tribal health, representatives of the Tribal Welfare Department, officials from the Tribal Reform Yardstick of the GoAP, and other relevant stakeholders.

70. **The SPIU will monitor overall implementation of the ESMF.** The SPIU will have a dedicated environmental and social safeguards expert who will oversee, manage, and report on progress of all activities pertaining to the ESMF and coordinate with safeguards focal points within the district quality assurance teams. Safeguards training needs have been identified as part of the ESMF at both the state and the district levels, to strengthen capacity of all participating nodal officers.

## (ii) Gender

71. **Analysis of the disease burden and health service utilization in the state indicates that while there is a greater prevalence<sup>29</sup> of NCDs among men (59.5 percent) than women (52.7 percent) the utilization of services is poorer among men.** As per the National Family Health Survey 2015–16, in India, of the 1.7 percent men and women ages 15–49 years who reported having diabetes, only 72.5 percent men sought treatment compared to 81.3 percent women. Thus, the primary gender gap in the context of the project is utilization of health services by men and women, specifically primary health care services. Primary health care, mainly delivered by ANMs and ASHAs, is largely geared to address maternal and child health with an obvious women-centric focus. Utilization of public primary health care services by men is consequently low.<sup>30</sup> With no NCD services available for men at the PHC level, access to care is more challenging, requires travel to higher-level facilities, takes time, and can cause wage loss. The project, as a corrective measure to reduce existing gender gaps in accessing cost-effective primary health care, plans to roll out NCD screening for men at the PHC level. Targeted communication campaigns to reach out to men and sensitize them on NCD prevention, symptoms, and screening facilities will also be carried out.

<sup>29</sup> Institute of Health Metrics and Evaluation - Burden of Disease.

<sup>30</sup> Interactions with health officials and stakeholder consultations.



Early screening and management of targeted conditions at the primary care level is arguably more cost-effective than treating NCDs once they become complicated and require specialist care.

72. **While bringing men within the fold of primary health care is a key focus, the gender analysis also points to the need to continue to strengthen access of health services by women.** Even today, health care expenditure on females is systematically lower than on males across socioeconomic and demographic profiles.<sup>31</sup> In cognizance of this, the project introduces a more active NCD screening and management approach for women, facilitating access not just at the PHC but also at the SC levels (enabling last-mile delivery). These efforts are expected to dissipate any potential negative impact that may emanate from differentiated health access by women typically influenced by deep-rooted sociocultural norms and skewed financial priorities within households. Investments in women-specific NCDs are also given emphasis, specifically cervical and breast cancer that are the leading causes of cancer mortality among women. While cervical cancer accounts for 17 percent of all cancer deaths among women 30 to 69 years of age,<sup>32</sup> about one-third of women in India diagnosed with breast cancer do not survive (mortality of 12.7 per 100,000 women).<sup>33</sup> Measuring the delivery of cervical cancer screening is used as a proxy for gender-specific screening for women as they will also be screened for breast cancer and other conditions at the same time.

73. **Relevant indicators.** In line with these identified gaps, the relevant gender indicators in the Results Framework are (a) increase in the percent of adult population (disaggregated by gender) screened and stratified by risk as per clinical protocols for hypertension and diabetes<sup>34</sup> and (b) increase in the percentage of women above age 30 screened for cervical cancer at subcenters or PHC facilities. While an increase in NCD screening among men will reflect progress against the first indicator, an increase in cervical cancer screening will point to success in making health services more gender-responsive.

### (iii) Climate

74. **The climate and disaster risk screening tool was used to assess the short- and long-term climate and disaster risks to the project.** The project location and target beneficiaries have experienced climate and geophysical hazards in the past, such as cyclones, and are expected to experience these in the future with moderate intensity, frequency, or duration. Aside from the impact of extreme weather events, the State Action Plan on Climate Change (SAPCC) for Andhra Pradesh (March 2012) identifies that health vulnerabilities, because of climate change, will rise through increasing incidence of water, vector and airborne diseases as well as malnutrition. The potential negative impact of these vulnerabilities on project activities and outcomes is assessed as 'low' as the state has the necessary capacities to address these

<sup>31</sup> Saikia, N., Moradhvaj, J. K. Bora. 2016. "Gender Difference in Health-Care Expenditure: Evidence from India Human Development Survey." *PLoS ONE* 11 (7): e0158332. doi:10.1371/journal.pone.0158332.

<sup>32</sup> Bobdey, S., J. Sathwara, A. Jain, and G. Balasubramaniam. 2016. "Burden of Cervical Cancer and Role of Screening in India." *Indian Journal of Medical and Paediatric Oncology: Official Journal of Indian Society of Medical & Paediatric Oncology* 37 (4): 278–85.

<sup>33</sup> <http://cancerindia.org.in/india-still-low-breast-cancer-survival-rate-66-study/>.

<sup>34</sup> The indicator for men captures the introduction and increase of NCD services for men at the primary care level, which is addressing a key gap in service that did not exist previously. Given that the screening of NCDs for men will start with the project, it will take time for it to reach the scale of screening for women for which systems are already in place. Therefore, a clear reduction in screening gap between men and women will not be evident in the duration of the project.



challenges, including a high density of community-level health facilities and a disease surveillance system (the Knowledge Command Centre [KCC]) which can provide early warning to vulnerable populations.

75. **Climate adaptation and mitigation benefits.** The project includes several climate adaptation and mitigation measures to address the health-related vulnerabilities mentioned in the SAPCC.

- (a) Increasing the capacity of the health system to respond to the increasing incidence of all diseases (overall investment of US\$328 million), including those resulting from increasing climate vulnerabilities. The project focuses on ensuring the functionality of SCs to diagnose and dispense medications (DLI 7 valued at US\$68.54 million) and increase the accessibility of medications by strengthening the pharmaceutical supply chain system and working with private pharmacies (DLIs 3 and 5 valued at US\$6.25 million and US\$6.5 million, respectively).
- (b) Increasing the capacity for health surveillance, through an integrated online patient management system, which would contribute to the state's capacity to respond to and mitigate any disease outbreaks or natural disasters (DLI4 valued at US\$49.00 million).
- (c) Supporting the NQAS accreditation process which includes (i) use of energy-efficient bulbs for lighting; (ii) availability of power backup in health facilities, as measures to reduce energy requirements while improving efficiency; and (iii) biomedical waste management (including segregation, collection, treatment, and disposal) as a critical element of infection control and to minimize negative impacts to the ecosystem and reduce population risk of exposure to diseases caused by unsanitary environs (DLI1 valued at US\$54.58 million).
- (d) Supporting a policy decision to use solar power as a clean and efficient energy source as a back-up source for those facilities connected to the grid and as the principal energy source for those PHCs and e-SCs not connected to the grid (DLI 7.2 valued at US\$1.34 million).
- (e) Reducing the distance and number of times a patient would have to travel by vehicle to access health services by strengthening the capacity to PHCs and SCs to deliver more and better-quality services (DLIs 7 and 8 valued at US\$68.54 million and US\$20.50 million, respectively), leading to reduced carbon emissions.<sup>35</sup>

#### (iv) Citizen Engagement

76. The project includes several initiatives aimed at strengthening citizen engagement and improving health system accountability. These include (a) a health facility quality monitoring dashboard that tracks and makes public (once the system is established) NQAS scores attained by each facility, with the intention of making facilities accountable for maintaining quality of care; (b) the establishment of a patient

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<sup>35</sup> The district hospital in Vizianagaram district, for example, sees on average 1,063 outpatients per day. Assuming 20 percent of those visits could be averted as more patients are treated at the PHC level, this would result in 78,000 outpatient visits avoided per year and a conservative estimate would be a reduction of 17 million vehicular km per year or 85 million km over the five-year project period in the state, with benefits accruing beyond the project's life. Using an average distance of 11 km from the district hospital to PHC (11 km is the distance from the district hospital to the nearest PHC in Vizianagaram district. It is a conservative number as the distance to the farthest PHC in the district is 165 km), this would translate to over 1.7 million km (District-level outpatients per year × distance not travelled = (1,063 outpatients per day × 365 days × 20 percent not traveling) × (11 km × 2) = 1.7 million km) of vehicular travel that could be avoided per year in the district.



satisfaction and feedback system to assess a patient’s overall health facility experience across all facilities from district hospitals to SCs, with the objective of using the feedback to strengthen overall service delivery; (c) strengthening and establishing of HDCs across all facilities, which include both health staff and civil society representatives as members, to review facility performance and feedback from the previously outlined systems, and take corrective action as needed; and (d) strengthening of the monthly health bulletin for the state, district, and village levels produced by the KCC, by ensuring inclusion of facility performance data in addition to existing information on health services provided at the facility. The health bulletin also includes information on key health issues in their village and tips for prevention.

77. **Relevant indicators.** The project Results Framework captures citizen engagement through the PDO indicator, increase in the average patient reported experience score, and the intermediate results indicator, increase in the number of facilities where the system for measuring and reporting on patient experience is operational.

**(v) Grievance Redress**

78. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB’s independent Inspection Panel which determines whether harm occurred, or could occur, because of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank’s attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank’s corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

**V. KEY RISKS**

79. The overall risk rating is Moderate.

Systematic Operations Risk-Rating Tool	
Risk Category	Rating (H, S, M, L)
Political and Governance	M
Macroeconomic	L
Sector Strategies and Policies	L
Technical Design of Project or Program	M
Institutional Capacity for Implementation and Sustainability	L
Fiduciary	M
Environment and Social	M
Stakeholders	L
Overall	M

Note: H = High; S = Substantial; M = Moderate; L = Low.



**VI. RESULTS FRAMEWORK AND MONITORING**

**Results Framework**

**COUNTRY: India**

**Andhra Pradesh Health Systems Strengthening Project**

**Project Development Objectives(s)**

The Project Development Objectives are to improve the quality and responsiveness of public health services and increase access of the population to an expanded package of primary health services.

**Project Development Objective Indicators**

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Improve quality of care</b>							
Increase in number of CHCs and PHCs with quality certification (Number)		0.00	50.00	84.00	120.00	158.00	198.00
<b>Improve responsiveness of public health services</b>							
Increase in the average patient reported experience score (Text)		Baseline established for patient reported experience					5 percentage point increase from baseline
<b>Increase access to an expanded package of primary health services</b>							
Increase in percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at the SC or PHC (Text)		0.00	Clinical protocols for NCD screening and risk stratification defined	Clinical protocols for treatment/management of hypertension and diabetes at the PHC and subcenter level and referral to higher-level	Baseline Established through EMR installed at PHC and CHCs	Increase in baseline value by 1 percentage point	Increase in baseline value by 2 percentage point



Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
				facilities defined			
Increase in the percentage of pregnant women who receive full antenatal care (Percentage)		44.00	59.00	65.00	68.00	70.00	72.00

**Intermediate Results Indicators by Components**

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Improve Quality of Care</b>							
Increase in the number of CHCs and PHCs with more than 70 percent quality accreditation score following the State-level internal assessment (Number)		0.00	116.00	180.00	247.00	317.00	390.00
Establish and operate a quality tracking dashboard covering PHC and CHC facilities for supporting quality improvement and maintenance (Text)		No dashboard currently exists	(a) System established; and (b) Quality Assessment Service Provider(s) covering all districts engaged	42 PHC and CHC facilities included in quarterly dashboard reports	60 PHC and CHC facilities included in quarterly dashboard reports	79 PHC and CHC facilities included in quarterly dashboard reports	100 PHC and CHC facilities included in quarterly dashboard reports
Percentage of CHCs that are using performance-based contracts with private service providers to provide a core package of services contributing to quality of care		37.00	45.00	55.00	60.00	65.00	70.00



Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
(Percentage)							
Increase in the percentage of CHCs achieving at least 90% sanitation score monthly for a period of at least six months in a year (Percentage)		80.00	82.00	84.00	86.00	88.00	90.00
Improvement in the pharmaceutical stock management system at the PHCs and CHCs (Text)		Existing system provides information on current stock, but has limited advanced functions such as auto alerts indicating low stock	Formularies for PHCs and CHCs defined	Pharmaceutical inventory management system upgraded or developed with advanced management functions	Quarterly stock status reports for PHCs and CHCs generated	Quarterly stock status reports for PHCs and CHCs generated	Quarterly stock- status reports for PHCs and CHCs generated
<b>Improve Responsiveness of Public Health Services</b>							
Increase in the number of health facilities with an operational integrated online patient management system (Number)		0.00	11.00	58.00	1,400.00	1,400.00	1,400.00
Increase in the percentage of patients accessing their individual EMR (Text)		0.00	0.00	Baseline established from EMR system installed at teaching hospitals in Year 1	2% increase from baseline	4% increase from baseline	6% increase from baseline
Private pharmacies empaneled to dispense the state-financed drugs to patients (Text)		No policy or empanelment of private pharmacies	State Cabinet approval/Government order issuance of policy for empaneling private pharmacies				Roll-out as per approved policy
Increase in the number of facilities where the system for measuring and reporting on patient experience is operational (Number)		0.00	11.00	58.00	1,400.00	1,400.00	1,400.00





Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Percentage of districts organizing quarterly review meetings on patient feedback (Percentage)		0.00	50.00	55.00	60.00	65.00	70.00
<b>Increase Access to an Expanded Package of Primary Health Services</b>							
Increase in the number of functional e-subcenters (Number)		40.00	3,836.00	6,190.00	6,190.00	6,190.00	6,190.00
Increase in the number of subcenters installed with solar power energy (Text)		Solar power used for only large teaching hospitals	Not due	State Cabinet approval/Government order issued and roll-out plan for introducing solar at subcenters requiring off-grid energy solutions developed	Roll-out as per plan	Roll-out as per plan	Roll-out as per plan
Increase in the number of subcenters with trained mid-level service providers (Number)		300.00	1,400.00	2,700.00	4,000.00	5,300.00	5,900.00
Increase in the percent of adult population screened and stratified by risk as per clinical protocols for hypertension and diabetes (Percentage)		12.00	23.00	34.00	45.00	56.00	67.00
Increase in the percent of male population screened and stratified by risk as per clinical protocols for hypertension and diabetes (Percentage)		1.00	8.00	14.00	21.00	28.00	35.00
Increase in the percent of female population screened		23.00	35.00	45.00	55.00	65.00	70.00



Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
and stratified by risk as per clinical protocols for hypertension and diabetes (Percentage)							
Increase in the percentage of women above age 30 years screened for cervical cancer at subcenters or PHC facilities (Percentage)		26.00	35.00	45.00	55.00	65.00	70.00
Research and evaluation undertaken to support the innovative approaches to delivery of primary health care (Text)		Population-based survey of NCD risk factor prevalence not undertaken and e-subcenter model overall effectiveness not evaluated	Baseline study for evaluation on e-subcenter completed	STEPS Survey undertaken			End-line study for evaluation on e-subcenter completed

**Monitoring & Evaluation Plan: PDO Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Increase in number of CHCs and PHCs with quality certification	Each CHC or PHC that is NQAS certified following an independent external assessment by the National Health Systems Resource Center.	Quarterly	NQAS certification report		DoHFW, AP



<p>Increase in the average patient reported experience score</p>	<p>Baseline data for patient reported experience in PHCs and CHCs. For capturing baseline data, the following will be measured:</p> <p>The average patient experience score across facilities where the patient feedback system is operational. The system should be operational in at least 50 CHCs and 100 PHCs to establish baseline.</p>	<p>Quarterly</p>	<p>Patient reported experience dashboard</p>		<p>DoHFW, AP</p>
<p>Increase in percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at the SC or PHC</p>	<p>For intermediate target 1: NCD-related screening and risk stratification protocols</p> <p>For intermediate target 2: Clinical treatment, management and referral protocols for diabetes and hypertension for all levels of facilities</p> <p>For intermediate targets 3&amp;4 and end target</p> <p>Numerator: Number of patients diagnosed and at</p>	<p>Quarterly</p>	<p>Issued protocols; and EHR/Updated Master Health Check-up system/APeRX</p>		<p>DoHFW, AP</p>



	<p>risk of hypertension and diabetes managed at the PHC or SC</p> <p>Denominator: Total number of patients diagnosed and at risk of hypertension and diabetes that have been identified as per protocol to be managed at the PHC or SC</p>				
Increase in the percentage of pregnant women who receive full antenatal care	<p>Full antenatal care (ANC) is defined as Pregnant women receiving at least four ANC visits, at least one TT injection, and taken IFA tablets or syrup for 100 or more days.</p> <p>This will be defined as “Of those women who delivered in the past year, the % who received full ANC care”.</p>	Annual	RCH portal/ANM Digi		DoHFW, AP

**Monitoring & Evaluation Plan: Intermediate Results Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Increase in the number of CHCs and PHCs with more than 70 percent quality accreditation score following the State-	Each CHCs and PHCs that earns a score of 70 percent or more on the NQAS	Quarterly	Quality Assessment Reports/QA		DoHFW, AP



level internal assessment	assessment tool, as administered by the state-level internal Quality Assurance (QA) team.		team and Online Quality Dashboard System (when established)		
Establish and operate a quality tracking dashboard covering PHC and CHC facilities for supporting quality improvement and maintenance	<p>For Intermediate Target 1:</p> <p>(a) An online system that tracks quality scores for health facilities that have achieved and are on the path of NQAS certification in order to facilitate maintenance and improvement of quality standards by health facilities. The system should provide reports for health administrators and facility managers to act upon.</p> <p>(b) contracts with service providers in place to facilitate quality improvement and quality monitoring for all districts.</p> <p>For Intermediate Targets 2 to end target:</p>	Quarterly	Online Quality Dashboard System and contract documents		DoHFW, AP



	<p>Increase in facilities for which quarterly data is being reported (for at least two quarters) on the Quality Dashboard.</p> <p>Note, each CHC or PHC that has achieved NQAS certification and for which reporting on quality scores is available on the quality dashboard for at least two quarters will be considered.</p>				
<p>Percentage of CHCs that are using performance-based contracts with private service providers to provide a core package of services contributing to quality of care</p>	<p>Numerator: Number of CHCs that are using performance-based contracts with private service providers to provide a core package of services contributing to improved quality of care</p> <p>Denominator: Total number of CHCs in the state</p> <p>The core package of services include -(i) teleradiology (x-ray); (ii) laboratory diagnostics; (iii) biomedical equipment maintenance;</p>	<p>Quarterly</p>	<p>Report from APVVP who is managing the service contracts</p>		<p>DoHFW, AP</p>



	and (iv) sanitation services. Each CHC is expected to be covered through performance-based contracts with private service providers for these 4 services.				
Increase in the percentage of CHCs achieving at least 90% sanitation score monthly for a period of at least six months in a year	<p>Numerator: Number of CHCs that achieve at least 90% sanitation score monthly for a period of at least six months in the Fiscal Year</p> <p>Denominator: Total number of CHCs that have performance-based sanitation contracts in place in that Fiscal Year.</p>	Quarterly	Sanitation Dashboard reporting facility-based scores daily		DoHFW, AP
Improvement in the pharmaceutical stock management system at the PHCs and CHCs	<p>Intermediate Target 1: Formularies for PHCs and CHCs defined</p> <p>Intermediate Target 2: An updated facility-level pharmaceutical stock management system which includes specific advanced functionality, including but not limited to: (i) automatic</p>	Quarterly	Updated pharmaceutical stock management system		DoHFW, AP



	<p>flagging of no and low stock of pharmaceuticals according to the specific health facility formulary; and (ii) automatic estimation of order requirements. The upgraded system (upgrade of existing system or new system) should be rolled out and in use in at least 50 PHCs or CHCs for a period of one month before being submitted for verification.</p> <p>Intermediate Target 3 to end target: Quarterly stock status reports being generated for PHCs and CHCs where the system is rolled out</p>				
<p>Increase in the number of health facilities with an operational integrated online patient management system</p>	<p>Each health facility that uses the new integrated online patient management system as defined in the contract between the service provider and the DoHFW.</p> <p>‘Health facilities’ include teaching hospitals, district and area hospitals, CHCs and PHCs.</p>	<p>Quarterly</p>	<p>Online patient management system or EHR</p>		<p>DoHFW, AP</p>





	‘Use’ is defined as, at least, (a) health records of chronic OPD and IPD patients being entered in the online system for at least 1 month; and (b) health facility staff trained in the use of the system.				
Increase in the percentage of patients accessing their individual EMR	Numerator: Number of patients accessing their individual EMR  Denominator: Number of patients whose EMRs are entered in the EHR system	Quarterly	EHR system		DoHFW, AP
Private pharmacies empaneled to dispense the state-financed drugs to patients	Intermediate Target 1:  State Cabinet approval or Government Order issuance of the policy with respect to private pharmacies being able to dispense state-financed outpatient prescription medications to patients free of charge.  End Target: Report detailing the status of roll out of policy	Annual	Approved Policy Document and Progress Report		DoHFW, AP
Increase in the number of facilities where the system for measuring and reporting	This indicator refers to a system for measuring	Quarterly	Patient reported		DoHFW, AP



<p>on patient experience is operational</p>	<p>patient reported experience that will be designed and rolled out, meeting the following criteria: (a) a minimum set of standardized questions across all facilities; (b) easily accessible to all patients; and (c) allows for anonymity.</p> <p>‘Operational’ is defined as at least 10 percent inpatients in teaching, district and area hospitals and 5 percent outpatients in CHCs and PHCs per month using the system to report on their experience for at least a month.</p> <p>‘Health facilities’ include teaching hospitals, area and district hospitals, CHCs and PHCs.</p>		<p>experience dashboard</p>		
<p>Percentage of districts organizing quarterly review meetings on patient feedback</p>	<p>Numerator: Number of district quality committees that organize quarterly meetings (4 meetings) in a year on patient feedback</p> <p>Denominator: Total number</p>	<p>Quarterly</p>	<p>Minutes of Meeting and Action Taken Reports</p>		<p>DoHFW, AP</p>



	<p>of districts</p> <p>Quarterly meetings will be measured through directives for action issued at the meeting based on a review of feedback</p>				
<p>Increase in the number of functional e-subcenters</p>	<p>Functional e-subcenters are defined as those with: (i) qualified doctor available through teleconsultation; (ii) at least one trained ANM; (iii) necessary equipment for NCD screening; and (iv) drug ATM with drugs in-stock and available for dispensing.</p> <p>Trained ANM staff is defined as an ANM that has completed orientation training on the examination and consultation process assisted through telemedicine.</p> <p>Necessary equipment for NCD screening defined as that is listed in the contract with the service provider.</p> <p>The drugs that are to be in stock are those that are to</p>	<p>Quarterly</p>	<p>Monthly e-SC report submitted by service provider</p>		<p>DoHFW, AP</p>



	<p>be listed in the contract with the service provider.</p> <p>Furthermore, it will be considered functional, when there is a track record of providing consultation through telemedicine for at least 1 month.</p>				
<p>Increase in the number of subcenters installed with solar power energy</p>	<p>Intermediate Target 2 is defined as (a) a State Cabinet decision or Government Order issuance to introduce solar power at subcenters which are off-grid; and (b) a roll out plan developed by the DoHFW with targets, budgets and timeline for roll out outlined.</p> <p>Intermediate Target 3 to End Target is defined as the number of sub-centers that are installed with solar power as their primary source of electricity, as per the roll out plan mentioned in Intermediate Target 2</p>	<p>Bi-annual</p>	<p>Report on status of roll out plan</p>		<p>DoHFW</p>



Increase in the number of subcenters with trained mid-level service providers	This indicator is defined as the number of sub-centres where trained mid-level service providers have been placed by the DoHFW	Annual	MLP status report prepared by the DPH&FW		DoHFW, AP
Increase in the percent of adult population screened and stratified by risk as per clinical protocols for hypertension and diabetes	Numerator: Total number of adults aged above 30 years screened and stratified by risk as per protocol for hypertension and diabetes  Denominator: Total number of adults aged above 30 years	Quarterly	EHR or Updated Master Health Check-up system		DoHFW, AP
Increase in the percent of male population screened and stratified by risk as per clinical protocols for hypertension and diabetes	Numerator: Total number of male population aged above 30 years screened and stratified by risk as per protocol for hypertension and diabetes  Denominator: Total number of male population aged above 30 years	Quarterly	<b>EHR or updated Master Health Check-up system</b>		DoHFW, AP
Increase in the percent of female population screened and stratified by risk as per clinical protocols for hypertension and diabetes	Numerator: Total number of female population aged above 30 years screened and stratified by risk as per protocol for hypertension and diabetes  Denominator: Total number	Quarterly	EHR or Updated Master Health Check Up System		DoHFW, AP



	of female population aged above 30 years				
Increase in the percentage of women above age 30 years screened for cervical cancer at subcenters or PHC facilities	Numerator: Cumulative number of women screened at least once as reported by subcenters or PHCs, including those women seen by mobile medical units or other outreach events.  Denominator: The estimated number of women over the age of 30	Quarterly	EHR or Updated Master Health Check Up System		DoHFW, AP
Research and evaluation undertaken to support the innovative approaches to delivery of primary health care		Annual	Survey Report		DoHFW, AP



**ANNEX 1: DISBURSEMENT-LINKED INDICATORS AND VERIFICATION PROTOCOLS**

**DISBURSEMENT-LINKED INDICATORS**

DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
<b>IMPROVE QUALITY OF CARE</b>								
1. Increase in the number of CHCs and PHCs achieving and maintaining quality standards	54.58	16.68%	DLR 1.1	Increase in the number of CHCs and PHCs with more than 70 percent quality accreditation score, following State level internal assessment by the DoHFW				
				<b>Baseline:</b> 0 CHCs and PHCs				
				<b>Target:</b> 390 CHCs and PHCs				
			<b>Value:</b> US\$27,300,000					
			<b>Formula:</b> US\$70,000 for each CHC or PHC					
			DLR 1.2	Increase in the number of CHCs and PHCs with quality certification				
<b>Baseline:</b> 0 CHCs and PHCs								
<b>Target:</b> 198 CHCs and PHCs								
<b>Value:</b> US\$21,780,000								
<b>Formula:</b> US\$110,000 for each CHC or PHC								
DLR 1.3	Quality tracking dashboard system established, and service providers contracted to support quality improvement and maintenance across all districts							



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
				<b>Baseline:</b> No quality tracking system and no service providers in place  <b>Target:</b> System and service providers covering all districts in place  <b>Value:</b> US\$1,500,000				
			DLR 1.4		Increase in the number of CHCs and PHCs for which quarterly data is being reported (for at least two consecutive quarters) on the Quality Dashboard  <b>Baseline:</b> 0 CHCs and PHCs <b>Target:</b> 100 CHCs and PHCs  <b>Value:</b> US\$4,000,000  <b>Formula:</b> US\$40,000 per CHC or PHC			
2. Increase in the percentage of CHCs covered by a full set of performance-based private sector service contracts and improved performance of those	26.25	8.02%	DLR 2.1	Percentage of CHCs that are using performance-based contracts with private service providers to provide a core package of services contributing to quality of care.  <b>Baseline:</b> 37%  <b>Target:</b> 70%  <b>Value:</b> US\$16,500,000  <b>Formula:</b> US\$500,000 per percentage point increase over baseline				





DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
contracts towards quality of care			DLR 2.2	(a) Increase in the percentage of CHCs achieving at least 90% sanitation score monthly for a period of at least six months in a year		(b) Increase in the percentage of CHCs achieving at least 90% sanitation score monthly for a period of at least six months in a year, following the achievement of DLR 2.2(a)		(c) Increase in the percentage of CHCs achieving at least 90% sanitation score monthly for a period of at least six months in a year, following the achievement of DLR 2.2(b)
				<b>Baseline:</b> 80% CHCs <b>Target:</b> 82% CHCs		<b>Baseline:</b> DLR 2.2(a) achievement <b>Target:</b> 86% CHCs		<b>Baseline:</b> DLR 2.2(b) achievement <b>Target:</b> 90% CHCs



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
				<b>Value:</b> US\$1,950,000  <b>Formula:</b> US\$975,000 per percentage point increase over baseline		<b>Value:</b> US\$3,900,000  <b>Formula:</b> US\$975,000 per percentage point increase over achievement of DLR 2.2 (a) or 82%, whichever is lesser		<b>Value:</b> US\$3,900,000  <b>Formula:</b> US\$975,000 per percentage point increase over achievement of DLR 2.2 (b) or 86%, whichever is lesser
3. Improvement in the pharmaceutical stock management system at	6.25	1.91%	DLR 3.1	Pharmaceutical inventory management system for use at PHCs and CHCs upgraded with advanced management functions				



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
the PHCs and CHCs to reduce stock out risks				<b>Baseline:</b> Current system does not have advanced functions such as defined facility-based formulary, automatic flags for low or no stock, and automatic estimation of order requirements.  <b>Target:</b> System upgraded to include above stated advanced options  <b>Value:</b> US\$6,250,000				
<b>IMPROVE RESPONSIVENESS OF PUBLIC HEALTH SERVICES</b>								
4. Increase in the number of health facilities with an operational integrated online patient management system	49.00	14.98%	DLR 4.1	Increase in the number of health facilities with an operational integrated online patient management system				
				<b>Baseline:</b> 0 <b>Target:</b> 1,400				
				<b>Value:</b> US\$49,000,000				
				<b>Formula:</b> US\$35,000 per facility				
5. Private pharmacies empaneled to dispense state-financed drugs, improving access to the population	6.50	1.99%	DLR 5.1	State Cabinet approval/ Government Order issued of policy for empaneling private pharmacies				
				<b>Baseline:</b> Does not exist				
				<b>Target:</b> Policy in place				
				<b>Value:</b> US\$6,500,000				



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
6. Development and implementation of a system for measuring and reporting on patient experience	32.00	9.78%	DLR 6.1	System designed and operational in the health facilities				
				<b>Baseline:</b> 0				
				<b>Target:</b> 1,400				
			<b>Value:</b> US\$28,000,000					
			<b>Formula:</b> US\$20,000 per health facility					
			DLR 6.2			(a) Baseline established for patient-reported experience in PHCs and CHCs	(b) Increase in the patient-reported experience from the baseline	
		<b>Baseline:</b> No baseline		<b>Baseline:</b> Established under DLR 6.2(a)				
		<b>Target:</b> Baseline established		<b>Target:</b> Increase in 5 percent points from baseline				
			<b>Value:</b> US\$1,500,000	<b>Value:</b> US\$2,500,000				
				<b>Formula:</b> US\$500,000 for each percentage point increase over baseline				



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs					
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)	
<b>INCREASING ACCESS TO AN EXPANDED PACKAGE OF PRIMARY HEALTH SERVICES</b>									
7. Increase in the number of functional e-subcenters	68.54	20.95%	DLR 7.1	Increase in the number of functional e-SCs					
				<b>Baseline:</b> 40 e-SCs <b>Target:</b> 6,190 e-SCs					
				<b>Value:</b> US\$61,500,000					
			<b>Formula:</b> US\$10,000 per e-SC over the baseline						
			DLR 7.2	State Cabinet approval/ Government Order issued and rollout plan for solar-equipped SCs developed					
				<b>Baseline:</b> No policy in place					
				<b>Target:</b> State cabinet decision issued and rollout plan for solar-equipped SCs developed					
			<b>Value:</b> US\$1,340,000						
			DLR 7.3	(a) Baseline study for evaluation on e-SC completed			(b) End-line study for evaluation on e-SC completed		
				<b>Baseline:</b> No evaluation			<b>Baseline:</b> No evaluation		
<b>Target:</b> Baseline study completed				<b>Target:</b> End-line study completed					
<b>Value:</b> US\$2,850,000				<b>Value:</b> US\$2,850,000					



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
8. Increase in the percentage of patients diagnosed and at risk of hypertension and diabetes who are managed at the SC or the PHC	20.5	6.27%	DLR 8.1	(a) DoHFW approves and issues clinical protocols for NCD screening and risk stratification of patients.	(b) DoHFW approves and issues clinical protocols for treatment and management of hypertension and diabetes at the PHC and SC level and referral to higher-level facilities.			
				<b>Baseline:</b> No protocols in place <b>Target:</b> Protocols in place	<b>Baseline:</b> No protocols in place <b>Target:</b> Protocols in place			
				<b>Value:</b> US\$2,000,000	<b>Value:</b> US\$4,000,000			



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
			DLR 8.2		(a) STEPS (STEPwise Approach to Surveillance) Survey on NCD completed	(b) Baseline established of the percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at PHCs or SCs	(c) Increase in the percentage of patients diagnosed and at risk of hypertension and diabetes, managed as per protocol at PHCs or SCs	
					<b>Baseline:</b> No survey <b>Target:</b> Survey completed	<b>Baseline:</b> No system in place to capture patient management data <b>Target:</b> A system in place to capture screening and patient management data to establish baseline	<b>Baseline:</b> As established under DLR 8.2 (b) <b>Target:</b> 2 percentage point increase from baseline	



DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
					Value: US\$3,500,000	Value: US\$1,000,000	Value: US\$10,000,000 Formula: US\$5,000,000 per percentage point increase over baseline	
9. Increase in the percentage of women in the target age group screened for cervical cancer at SCs or PHCs	30.80	9.41%	DLR 9.1	Increase in the percentage of women above 30 years of age screened for cervical cancer at SCs or PHC facilities				
				Baseline: 26%				
				Target: 70%				
				Value: US\$30,800,000 Formula: US\$700,000 per percentage point increase over baseline				
10. Increase in the percentage of pregnant women who received full antenatal care	32.76	10.01%	DLR 10.1	(a) Of the women who delivered in public health facilities during the past year, an increase in the percentage of pregnant women who received full antenatal care		(b) Of the women who delivered in public health facilities during the past year, an increase in the percentage of pregnant women who received full antenatal care, following the period of DLR 10.1(a)		(c) Of the women who delivered in public health facilities during the past year, an increase in the percentage of pregnant women who received full antenatal care, following the period of DLR 10.1(b)





DLIs	Total Financing Allocated to DLI (US\$, millions)	As % of Total Financing Amount	DLR No.	DLRs				
				FY2019/20 (Year 1)	FY2020/21 (Year 2)	FY2021/22 (Year 3)	FY2022/23 (Year 4)	FY2023/24 (Year 5)
				<b>Baseline:</b> 44% <b>Target:</b> 59%		<b>Baseline:</b> DLR 10.1(a) achievement <b>Target:</b> 68%		<b>Baseline:</b> DLR 10.1(b) achievement <b>Target:</b> 72%
				<b>Value:</b> US\$17,550,000  <b>Formula:</b> US\$1,170,000 per percentage point increase over baseline		<b>Value:</b> US\$10,530,000  <b>Formula:</b> US\$1,170,000 per percentage point increase over achievement of DLR 10.1(a) or 59% whichever is lesser		<b>Value:</b> US\$4,680,000  <b>Formula:</b> US\$1,170,000 per percentage point increase over achievement of DLR 10.1(b) or 68% whichever is lesser



**DLI VERIFICATION PROTOCOLS**

DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
1. Increase in the number of CHCs and PHCs achieving and maintaining quality standards	DLR 1.1 is defined as: Each CHCs and PHCs that earns a score of 70 percent or more on the NQAS assessment tool, as administered by the state-level internal Quality Assurance (QA) team. Achievement is an increase from the current baseline value, which is '0'.	Yes	Quality Assessment Reports/QA team, DoHFW, and Online Quality Dashboard System (when established)/ DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) review the quality assessment reports submitted by the QA team, DoHFW and confirm the number of facilities that have met or exceeded the required score and (b) randomly select 2 facilities of each type and confirm the validity of the scores.
	DLR 1.2 is defined as: Each CHC or PHC that is NQAS certified following an independent external assessment by the National Health Systems Resource Center. Achievement is an increase from the current baseline value, which is '0'.	Yes	NQAS certification/ DoHFW	IVA	The IVA will review the NQAS assessment documents and confirm the number of facilities that have received NQAS certification from the external assessors



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	<p>DLR 1.3 is defined as:</p> <p>(a) An online system that tracks quality scores for health facilities that have achieved and are on the path of NQAS certification to facilitate maintenance and improvement of quality standards by health facilities. The system should provide reports for health administrators and facility managers to act upon.</p> <p>(b) Contracts with service providers in place to facilitate quality improvement and quality monitoring for all districts.</p>	No	Online Quality Dashboard System and contract documents/ DoHFW	IVA	The IVA will review the online quality dashboard and confirm that the system can (a) track the progress of health facilities toward NQAS certification; (b) track the maintenance of quality standards by health facilities that have already received NQAS certification; and (c) provide downloadable reports for health administrators and facility managers to act upon. The IVA will also review contract documents and confirm contracts with service providers are in place for all districts.
	<p>DLR 1.4 is defined as:</p> <p>Increase in the number of CHCs and PHCs for which quarterly data is being reported (for at least two quarters) on the Quality Dashboard.</p> <p>Each CHC or PHC that has achieved NQAS certification and for which reporting on quality scores is available on the quality dashboard (established under DLR 1.3) for at least two quarters achievement is an increase from the current baseline value, which is '0'.</p>	Yes	Online Quality Dashboard System/DoHFW	IVA	The IVA will review the online quality dashboard and confirm that quality reports for two quarters are available for the NQAS certified facilities.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
2. Increase in the percentage of CHCs covered by a full set of performance-based private sector service contracts and improved performance of those contracts towards quality of care	<p>DLR 2.1 is defined as:</p> <p><b>Numerator:</b> Number of CHCs that are using performance-based contracts with private service providers to provide a core package of services contributing to improved quality of care</p> <p><b>Denominator:</b> Total number of CHCs in the state</p> <p>The core package of services includes (a) teleradiology (X-ray); (b) laboratory diagnostics; (c) biomedical equipment maintenance; and (d) sanitation services. Each CHC is expected to be covered through performance-based contracts with private service providers for these 4 services.</p> <p>At present, the status of service provider contracts is 73 (CHCs with teleradiology (X-ray)) + 195 (CHC with lab diagnostics) + 195 (CHCs with biomedical equipment maintenance) + 115 (CHCs with sanitation services). The baseline is thus 73/195 (37%).</p> <p>Each percentage point increase from baseline will be recorded as achievement toward target.</p>	Yes	APVVP Report which is managing the service contracts/ DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) review service provider contract documents to confirm CHCs are covered by the core package of services and (b) randomly select 5 percent of facilities and confirm through a field visit the coverage of the core package of services through performance-based service contracts.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	<p>DLR 2.2 is defined as:</p> <p><b>Numerator:</b> Number of CHCs that achieve at least 90% sanitation score monthly for a period of at least six months in the fiscal year (does not need to be consecutive six months)</p> <p><b>Denominator:</b> Total number of CHCs that have performance-based sanitation contracts in place in that fiscal year.</p> <p>Each percentage point increase from the baseline of 80% will be counted as achievement.</p>	Yes	Sanitation Dashboard reporting facility-based scores daily/DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will confirm the reported average monthly sanitation score for each reported facility for the reported period through a review of the daily reported scores in the online sanitation report system. No site visits are required.
3. Improvement in the pharmaceutical stock management system at the PHCs and CHCs to reduce stock out risks	<p>DLR 3.1 is defined as:</p> <p>An updated facility-level pharmaceutical stock management system which includes specific advanced functionality, including but not limited to, (a) automatic flagging of no and low stock of pharmaceuticals according to the specific health facility formulary and (b) automatic estimation of order requirements. The upgraded system (upgrade of existing system or new system) should be rolled out and in use in at least 50 PHCs or CHCs for a period of one month before being submitted for verification.</p>	No	Updated pharmaceutical stock management system/DoHFW	IVA	The IVA will, based on achievement report provided by the DoHFW, (a) review the functionality of the system in line with the description; and (b) check that a system with the described functionalities is in use in a randomly selected 5 facilities where it is rolled out.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
4. Increase in the number of health facilities with an operational integrated online patient management system	<p>DLR 4.1 is defined as: Each health facility that uses the new integrated online patient management system as defined in the contract between the service provider and the DoHFW.</p> <p>‘Health facilities’ include teaching hospitals, district and area hospitals, CHCs and PHCs.</p> <p>‘Use’ is defined as, at least, (a) health records of chronic OPD and IPD patients being entered in the online system for at least 1 month and (b) health facility staff trained in the use of the system.</p> <p>Achievement is an increase from the current baseline value, which is ‘0’.</p>	Yes	Integrated online patient management system/DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) view the integrated online patient management system and confirm that it is in ‘use’ and (b) visit a random sample of 5 percent PHCs, CHCs, and area hospitals and 2 district and 2 teaching hospitals to confirm that the system is in ‘use’ in that facility as described in the ‘description of achievement’.
5. Private pharmacies empaneled to dispense state-financed drugs, improving access to the population	<p>DLR 5.1 is defined as: State Cabinet approval or Government Order issued of the policy with respect to private pharmacies being able to dispense state-financed outpatient prescription medications to patients free of charge.</p>	No	Approved policy document/ DoHFW	IVA	Based on information provided by the DoHFW, the IVA will confirm that the policy to empanel private pharmacies to dispense state-financed drugs to patients is approved and issued.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
6. Development and implementation of a system for measuring and reporting on patient experience	<p>DLR 6.1 is defined as: Each health facility that has an operational system in place for measuring patient reported experience that meet the following criteria: (a) a minimum set of standardized questions across all facilities; (b) easily accessible to all patients; and (c) allows for anonymity.</p> <p>‘Operational’ is defined as at least 10 percent inpatients in teaching, district, and area hospitals and 5 percent outpatients in CHCs and PHCs per month using the system to report on their experience for at least one month.</p> <p>‘Health facilities’ include teaching hospitals, area and district hospitals, CHCs and PHCs. The technological platform (kiosk, tablet, or other) does not have to be the same across all facilities.</p>	Yes	Online system for reporting patient experience/ DoHFW	IVA	Based on the achievement report provided by the DoHFW the IVA will (a) verify that the system for measuring patient-reported experience as outlined in the definition is operational and (b) visit a random sample of 5 percent PHCs, CHCs, and area hospitals and 2 district and 2 teaching hospitals to confirm that the system is ‘operational’ in that facility as described in the ‘description of achievement’.
	<p>DLR 6.2 (a) is defined as: Baseline data for patient reported experience in PHCs and CHCs.</p> <p>For capturing baseline data, the following will be measured: the average patient experience score across facilities where the system designed under DLR 6.1 is operational.</p> <p>The system should be operational for at least one month in at least 50 CHCs and 100 PHCs to establish baseline.</p>	No	Patient-reported experience dashboard/ DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) confirm a system as defined in DLR 6.1 is in place to capture patient-reported experience and (b) review data on the system to confirm baseline figures are accurate.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	<p>DLR 6.2 (b) is defined as: Percentage point increase, from baseline established under DLR 6.2(a), in the average patient experience score across facilities where the system designed under DLR 6.1 is operational.</p> <p>The increase from baseline should be reported at least after 12 months following the establishment of baseline.</p>	Yes	Patient-reported experience dashboard/ DoHFW	IVA	Based on the achievement report provided by the DoHFW the IVA will (a) review the data reported by the DoHFW and confirm the numbers from the patient-reported experience dashboard and (b) visit a randomly selected sample of 10 facilities to confirm the use of the dashboard.
7. Increase in the number of functional e-subcenters	<p>DLR 7.1 is defined as: The number of functional e-SCs. Functional e-SCs are defined as those with (a) qualified doctor available through teleconsultation, (b) at least one trained ANM, (c) necessary equipment for NCD screening, and (d) drug dispensing machine or 'ATM' with drugs in stock and available.</p> <p>Trained ANM staff is defined as an ANM that has completed orientation training on the examination and consultation process assisted through telemedicine.</p> <p>Necessary equipment for NCD screening defined as that is listed in the contract with the service provider.</p>	Yes	Monthly report of e-SCs/DoHFW	IVA	<p>Based on the achievement report provided by the DoHFW, the IVA will (a) review the e-SC reports and confirm the reported numbers of functional e-SCs and (b) randomly select 10 e-SCs and through field visits and confirm they meet the specified criteria.</p> <p>The sample should primarily include newly established e-SCs but also include a small number of previously reported e-SCs to ensure that they continue to operate.</p>





DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	<p>The drugs that are to be in stock are those that are to be listed in the contract with the service provider. Furthermore, it will be considered functional when there is a track record of providing consultation through telemedicine for at least 1 month.</p> <p>Achievement is an increase from the current baseline value, which is '40'.</p>				
	<p>DLR 7.2 is defined as:            (a) Approval by the State Cabinet or the issuance of a Government Order on the use of solar solutions at e-subcenters and            (b) A rollout plan, approved by the DoHFW's Executive Committee, in line with the cabinet decision.</p>	No	Cabinet decision and rollout plan/DoHFW	IVA	The IVA will review the documentation provided by the DoHFW and (a) confirm the cabinet decision on use of solar electricity at e-SCs and (b) confirm the rollout plan has been developed and approved in accordance with the cabinet decision.
	<p>DLR 7.3 (a) and (b) - This DLR will be achieved upon the establishment of a baseline and end-line study for the e-SC model of delivery.</p> <p>The details of the study design will be agreed in advance by the DoHFW and World Bank.</p>	No	Baseline and end-line study report/DoHFW	World Bank	No independent verification will be required. Based on the reports submitted by the DoHFW, the World Bank will confirm that the baseline and end-line evaluation studies of the e-SC had been undertaken as agreed.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
8. Increase in the percentage of patients diagnosed and at risk of hypertension and diabetes who are managed at the SC or the PHC	DLR 8.1 (a) is defined as: (a) The development of NCD-related screening and risk stratification protocols that include a system for stratifying patients according to their potential risk of having a major cardiovascular event in the next 10 years based on their current risk profile. For example, low or minimal risk that does not require active management, moderate risk that can be further managed at the primary health care level, and high risk/diagnosed that requires immediate referral; and (b) The issuance of the protocols by the DoHFW across the state, including an orientation on the protocols to all doctors at the PHC and relevant service providers at the SC.	No	Protocols issued/DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) confirm that the screening and patient stratification protocols have been approved and issued and (b) an orientation of all PHC doctors and e-SC service providers on the same has been organized.
	DLR 8.1 (b) is defined as: (a) The development of specific clinical protocols for treating or managing diabetes and hypertension patients at the primary health care level (PHC or subcenter), including referral guidelines and (b) Issuance of these protocols and guidelines by the DoHFW within the state, including an orientation on the same to all doctors at the PHC and relevant service providers at the SC.	No	Protocols/DoHFW	IVA	Based on the documents provided by the DoHFW, the IVA will (a) confirm that the hypertension and diabetes treatment and management protocols, including referral guidelines—targeted at management and treatment of patients at the PHC and SC levels—have been approved and issued and (b) an orientation of all PHC doctors and e-SC service providers on the same has been organized.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	DLR 8.2 (a) - This DLR will be achieved when a STEPS Noncommunicable Disease Risk Factor Survey and Survey Analysis is undertaken to measure the prevalence of NCD risk factors in the adult population of AP, the knowledge of health status, use of health services, and NCD control status following the WHO-recommended methodology.	No	STEPS Survey report/DoHFW	World Bank	No independent verification will be required. Based on the report submitted by the DoHFW, the World Bank will confirm that the survey and report had been conducted in line with the WHO-recommended methodology.
	<p>DLR 8.2 (b) is defined as: Baseline data for the percentage of patients diagnosed and at risk of hypertension and diabetes, who are managed as per protocol (adopted in DLR 8.1) at PHCs or SCs.</p> <p>Specific indicators from the protocol adopted in DLR 8.1 will be jointly agreed by the World Bank and the DoHFW to measure ‘managed as per protocol’.</p> <p>For capturing baseline data, a system is required that can measure the following: <b>Numerator:</b> Number of patients diagnosed and at risk of hypertension and diabetes managed as per protocol at the PHC or SC <b>Denominator:</b> Total number of patients diagnosed and at risk of hypertension and diabetes that have been identified as per protocol to be managed at the PHC or SC</p>	No	EHR or Updated Master Health Check-up system/DoHFW	IVA	Based on information reported by the DoHFW, the IVA will (a) confirm a system is in place to capture data according to the defined numerator and denominator and (b) review data on the system to confirm baseline figures are accurate.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	<p>DLR 8.2 (c) is defined as:</p> <p><b>Numerator:</b> Number of patients diagnosed and at risk of hypertension and diabetes managed at the PHC or SC</p> <p><b>Denominator:</b> Total number of patients diagnosed and at risk of hypertension and diabetes that have been identified as per protocol to be managed at the PHC or SC.</p> <p>Achievement is defined as an increase from the baseline (referenced in DLR 8.2 (b)) in the percentage of patients diagnosed and at risk of hypertension and diabetes, who are managed as per protocol (adopted in DLR 8.1) at PHCs or SCs.</p>	Yes	EHR, Updated Master Health Check-up system, APerx/DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will (a) review the data reported by the DoHFW and confirm the numbers from the online data systems and (b) randomly select 10 facilities and from these randomly select 5 patients identified as being managed to confirm that treatment is being provided according to the protocols.
9. Increase in the percentage of women in the target age group screened for cervical cancer at subcenters or PHC facilities	<p>DLR 9.1 is defined as:</p> <p><b>Numerator:</b> Cumulative number of women screened at least once as reported by subcenters or PHCs, including those women seen by mobile medical units or other outreach events.</p> <p><b>Denominator:</b> The estimated number of women over the age of 30 as reported by the Praja Sadhikara Survey.</p> <p>Achievement is defined as an increase in the percentage of women above 30 years of age who have been screened for cervical cancer at least once above the baseline of 26%.</p>	Yes	Master Health Check-up/DoHFW	IVA	Based on, the achievement report provided by the DoHFW, the IVA will review the data reported by the DoHFW and confirm the numbers from the online data system.



DLIs	Definition/ Description of Achievement	Scalability of Disbursement (Yes/No)	Protocol to Evaluate Achievement of the DLI and Data/Result Verification		
			Data Source/Agency	Verification Entity	Procedure
	The baseline of 26% was determined based on the number of women who have been screened as of November 2018 (1,955,454) divided by the estimated number over the age of 30 from the Praja Sadhikara Survey, which is 7,500,000.				
10. Increase in the percentage of pregnant women who received full antenatal care	<p>DLR 10.1 is defined as:</p> <p><b>Numerator:</b> Number of women who delivered in the past calendar year in public health facilities and who received full ANC according to the definition</p> <p><b>Denominator:</b> Total number of women who delivered in the past calendar year in public health facilities</p> <p>‘Full antenatal care’ is defined as at least four ANC visits, at least one TT injection, and taken Iron Folic Acid tablets or syrup for 100 or more days.</p> <p>Public health facilities include all health facilities reporting to the DoHFW. The data do not include women who have delivered at private facilities.</p> <p>Achievement is defined as an increase from baseline in the percentage of pregnant women who receive full ANC in public health facilities. This will be measured annually.</p>	Yes	Reproductive and Child Health portal, ANM Digi/DoHFW	IVA	Based on the achievement report provided by the DoHFW, the IVA will review the data reported by the DoHFW and confirm the numbers from the online data systems.



## ANNEX 2: DETAILED SECTORAL AND INSTITUTIONAL CONTEXT

- 1. In India, tremendous improvements have been made in the health sector over the past decade.** Infant and under-five mortality rates and MMRs have declined; communicable diseases, such as polio, have been eradicated; and progress has been made in the control of tuberculosis, HIV/AIDS, and malaria. These declines have been driven by significant investments and priorities placed on the health sector through programs such as the NHM in 2005, the Integrated Disease Surveillance Program in 2004, the scale-up and strengthening of programs for the control of communicable diseases such as the Revised National Tuberculosis Control Program, National Vector Borne Disease Control Program, and National AIDS Control Program. In the past year, these commitments have received a further boost with the launch of a national health insurance scheme—*Pradhan Mantri Jan Arogya Yojna* (PMJAY). The scheme aims to provide insurance coverage to approximately 107 million poor rural families and identified occupational categories of urban workers' families according to the latest Socio-Economic Caste Census data (approximately 500 million beneficiaries that are deprived of secondary and tertiary care services). This constitutes approximately 40 percent of India's population. The Government has also enhanced its focus on NCDs by introducing the concept of health and wellness centers under the NHM to deliver comprehensive primary health care services.
- 2. This commitment to improve health outcomes is mirrored in the state of AP as well.** The state ranks eighth in India on overall health performance on a National Health Index, which is a weighted composite of indicators in three domains: (a) health outcomes, (b) governance and information, and (c) key inputs and processes. It ranks a slightly higher seventh on the same index when it comes to annual incremental change in performance, indicating that it is not only better than the national average but is also improving rapidly on health performance. The state has also allocated 5 percent of its total public expenditure on health, which is higher than the national average of 3.9 percent. In terms of share of GDP, at 1.1 percent, it is however comparable to the national figure of approximately 1.15 percent of GDP on health. It has also clearly articulated its health sector goals in its vision document—*Sunrise Andhra Pradesh - Vision 2029*—as achieving an HDI of 0.9 and HALE of 64 years by 2029, a gain of 0.4 points in HDI and 6 years in HALE from 2015. A translation of this vision into specific strategies and commitments is further evidence of AP's efforts to improve its health outcomes and evolve its health sector to changing health needs and expectations of its population.
- 3. There have been significant declines, similar to or better than national averages, in MMR and IMR and an increase in service coverage in AP over the last decade.** MMR in the state declined from 154 per 100,000 live births in 2004–06<sup>36</sup> to 74 per 100,000 live births in 2014–16 (52 percent reduction). Similarly, its IMR declined from 54 per 1,000 live births in 2005–06 to 35 per 1,000 live births in 2015–16 (35 percent reduction). The national trends for the same period were a 38 percent and 37 percent reduction, respectively. At the same time, coverage of key services such as institutional deliveries, ANC checkups, and immunization increased. Institutional deliveries increased from 64.4 percent in 2005–06 to 93 percent in 2015–16. ANC checkups for women in the first trimester of pregnancy increased from 66.1 percent to 82.3 percent, and full immunization increased from 46 percent to 65.3 percent during the same period.

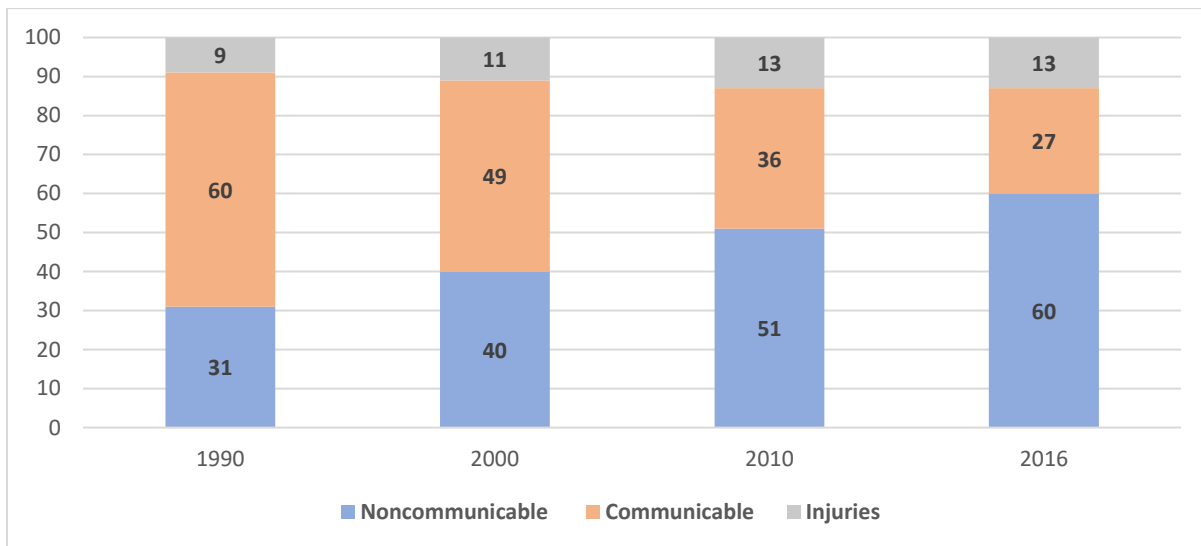
<sup>36</sup> Data of AP before its bifurcation in 2014.



4. **These trends, while positive, mask the emerging and last-mile challenges being faced by the state.**

- (a) **The public health system is currently not well positioned to address the increasing burden of NCDs.** As shown in Figure 2.1, NCDs, as a share of AP’s burden of disease, have grown rapidly to nearly 6 in 10 health conditions while communicable, maternal, neonatal, and nutritional diseases have declined to less than 3 in 10. Cardiovascular disease is the leading cause (15 percent), among all NCDs, in both men and women, followed by neoplasms (4 percent) and diabetes (3 percent). However, like most developing countries, AP’s health system is not geared to address this challenge. Treatment at higher-level facilities is the only option, as primary-level facilities are not equipped, either operationally or technically, to manage NCDs. This leads to an excessive burden on tertiary care facilities and a response that focuses primarily on treatment rather than prevention, early detection, and appropriate management.

Figure 2.1. Changes in AP Burden of Disease over Time



Source: Institute of Health Metrics and Evaluation - Burden of Disease.

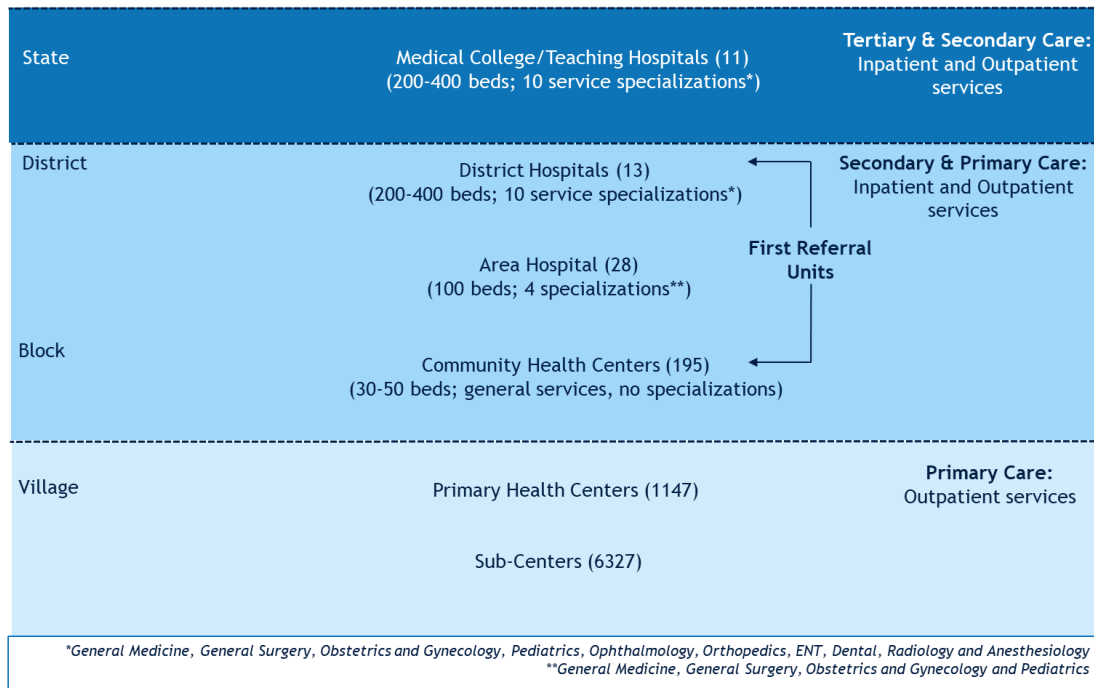
- (b) **Disparities exist in the coverage of MCH services and outcomes within the state as well as in the quality of MCH service delivery.** For example, IMR ranges from 48 per 1,000 live births in Srikakulam to 25 per 1,000 live births in Krishna district. Levels of full immunization too range from 77.7 percent in West Godavari district to 47.7 percent in Sri Potti Sriramulu Nellore. Similarly, while the percentage of women with four or more ANC visits is as high as 76.3 percent, full ANC, which reflects the completeness of the services being delivered, is only 43.9 percent. The inadequate quality of care is further evident from the relatively high MMR that exists in the state despite high rates of institutional deliveries. Even though 91.5 percent deliveries in the state take place in health facilities (2015–16), MMR is as high as 74 per 100,000 live births, pointing to issues in quality of care. This is likely one of the reasons that AP lags other higher-performing states, such as Kerala and Tamil Nadu, in health outcomes. IMR in Kerala is as low as 5.6 per 1,000 live births and MMR is 46 per 100,000 live



births, while IMR in Tamil Nadu is 20.2 per 1,000 live births and MMR is 66 per 100,000 live births.

- (c) **Poor quality of care in public health facilities contributes to the lack of confidence in public health services.** According to the NFHS-4, 2015–16, quality of care (50.5 percent) is cited as the primary reason for not using government facilities by households that do not use government facilities when sick. Other reasons include the waiting time being too long (37.2 percent), no nearby facility (36.5 percent), facility timing not being convenient (34.6 percent), and absence of health personnel (17.8 percent). This is reflected in the lower utilization rates of public health facilities compared to private health facilities. Currently, 64 percent households (2015–16) do not use a government health facility when sick. While this is much better than the 74.3 percent in 2005–06, indicating the use of public health services is slowly increasing, over half the population goes to the private sector for health care because of quality issues.

Figure 2.2. Structure of Public Health System in AP



5. The state has initiated efforts to address these challenges and strengthen its public health system (figure 2.2); however, there is still a long way to go.

- (a) **The state is already on the path of quality accreditation for its district and area hospitals, with 21 hospitals already NQAS certified.** However, there is a need to place equal emphasis on quality of care down to the lowest level of facility—that is, secondary and primary health facilities—especially in the context where NCD services now need to be provided. Furthermore, access to qualified and appropriately trained health personnel and availability of drugs (both critical elements of quality) needs to be ensured. The density of government





doctors in rural PHCs is less than adequate at 0.04 per 1,000 population.<sup>37</sup> This is much poorer than better performing states such as Kerala for which this proportion is 0.11 per 1,000 population. The non-availability of doctors at the PHC means patients may have to travel up to 100 km to avail health care at higher-level facilities. Moreover, doctors and ANMs at the PHC level have till date focused on MCH, family planning, and communicable diseases and are not well trained in managing the growing burden of chronic diseases.

- (b) **The state has in place an online pharmaceutical and supply chain management system called *e-Aushadi* that is reasonably effective.** It also has backup systems in place such as allowances for local-level purchasing (which is often at higher markups than bulk purchasing) and reallocation of stock among facilities. There is however scope for improvement to ensure that the right drugs are in the right place at the right time. The *e-Aushadi* system relies more on human operation than other, more modern systems. For example, it relies on the facility pharmacist's knowledge of the specific formulary used by that facility and her/his alertness in reviewing the stock online and ordering the supplies in time. Modernization of the system by upgrading its functionality such as the introduction of automated low-stock alerts and inclusion of definitions of facility formularies within the system will further improve its efficiency and reduce stock-out risks.
- (c) **The state has several well-established information systems to collect MCH and NCD patient data.** These include the mother and child tracking system for MCH services and the *Mahila* Master Health Check-up for NCD screening for women that has been introduced at the PHC level. NCDs in the state are further tracked based on confirmed diagnosis recorded through various government health programs such as *Chandranna Sanchara Chikitsa* (mobile medical units), *Mukhyamantri Arogya Kendralu* (e-Urban PHCs), *NTR Vaidya Seva* (health insurance program), and *NTR Vaidya Pariksha* (laboratory services). There is however no single integrated patient management system in the state, and the systems that do exist do not speak to each other. Each patient visit or movement through the system, from consultation to diagnostics or drug dispensation, requires fresh data entry at every level, which results in reduced efficiency, delays, and increased noncompliance to treatment. Patients move across levels of care as well as across public and private providers. However, they depend on mostly manual health records kept by the providers and thus lack the ability to make informed care-seeking decisions. This also limits the ability of the health system to support the adherence of patients, especially those with NCDs to long-term treatments.
- (d) **The state employs key cross-cutting public management approaches to improve performance.** In recent years, the DoHFW has been using information technology and data analytics as a key tool for improving service delivery and keeping citizens informed. It has introduced a quarterly reporting system called Report on State Health Indicators to monitor state- and district-wise performance against 100 key performance indicators. Information on the lagging districts and poor performing indicators is communicated to district collectors and health staff to nudge performance. It has also established a KCC that uses data analytics to analyze information from across sectors and programs to provide early warning of health hazards. The system also generates predictive reports showing the possible incidence of

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<sup>37</sup> National Health Profile, Ministry of Health, Medical and Family Welfare, 2018.



communicable diseases. The KCC also produces a monthly health bulletin for the state, district, and village levels. The bulletins serve the dual objective of creating awareness about health programs and services available at various public health facilities while also informing citizens of the main health issues in their village and tips for prevention. However, there are limited, credible patient feedback mechanisms or systems to enhance accountability of health facilities. While the state has established an extremely innovative real-time governance system managed by the Chief Minister's office as an independent mechanism of collecting citizen satisfaction data<sup>38</sup> on all government programs, it is not geared to provide facility-level feedback, which is a very important mechanism of improving quality and responsiveness of service delivery. Some facilities undertake their own patient satisfaction surveys; however, the surveys do not measure patient experience consistently, with a credible methodology, or provide a means of responding to the patients based on their feedback.

- (e) **The state engages with the private sector as a complement to the public sector, leveraging private sector know-how and performance incentives as a flexible approach to service delivery gaps.** The state, in fact, leads the country in this endeavor and was one of the first states in India to introduce PPPs in health. Having identified both clinical and nonclinical services that the private sector is better placed to deliver, the state has systematically started contracting them to deliver these services. As of now, it has PPP contracts covering a range of 21 services. These include sanitation and laundry services for public health facilities, mobile medical units to cover villages without a health facility within 5 km, e-Urban PHCs to provide health services, including specialty services through tele-consultation to urban poor and slum dwellers, dialysis centers, ambulance services, laboratory services, teleradiology, and biomedical equipment maintenance services among others. The state is now moving toward more structured performance-based contracts with these private providers to ensure that service standards are monitored and met.
  
- (f) **The state is focusing on reducing the financial and health risks of the growing NCD burden through insurance and expanding and strengthening the delivery of primary health care.** NCDs are chronic and may lead to complications if not managed well. Therefore, NCDs tend to lead to higher OOP expenditures and seeking of hospital care with undiagnosed and untreated diseases. The state, however, by strengthening its comprehensive health insurance scheme and primary health care services, aims to reduce OOP expenditures for health. This year, it has increased the financial coverage provided under its existing health insurance scheme, Dr. NTR Vaidya Seva Trust, from INR 250,000 per family to INR 500,000 per family in line with the national health insurance scheme, PMJAY. The scheme has approximately 90 percent coverage, has empaneled 400 government and private secondary and tertiary hospitals, and provides end-to-end cashless services for 1,044 diseases at no premium for below poverty line families. In addition to health insurance, the state is providing free drugs and diagnostics in public health facilities addressing most of the financial demand-side constraints in accessing services.

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<sup>38</sup> Beneficiary details of health programs are collected from the department's multiple information systems and calls are made to beneficiaries to take their feedback and record their satisfaction levels with the service provided.



- (g) **The state is also starting to expand the type of services of PHCs and SCs, which earlier had focused on MCH services, to include NCD services in line with the national policy of health and wellness centers.** It has introduced screening services for women at the PHC and, more recently, for men as well. However, no specific risk stratification and management protocols at the PHC and SC level have been introduced with every patient identified as ‘at risk’ being referred for specialist review to district or area hospitals.
- (h) **To complement its efforts in quality improvement and expansion of service coverage at the PHC and SC level, the state has also started experimenting with innovative technology solutions and private sector collaboration.** It has contracted private sector providers to ensure human resource and drug availability at the community level by using teleconsultations with doctors and drug dispensing machines through e-Urban SCs and e-SCs in 40 tribal centers. An early assessment of this pilot in tribal areas indicates encouraging results with an increase in outpatients at the SC from an average of 18 outpatients per month in the first quarter of implementation to 39 outpatients per month by the second quarter. This approach is expected to complement the planned public recruitment, training, and placement of qualified nurses at the SCs as NCD services are scaled up.

6. **As evident from the above, the state’s efforts focus on strengthening quality and service coverage of the public health system while at the same time engaging the private sector to address service delivery gaps.** The focus on strengthening the public health system is especially relevant in a context where a primary health care facility exists for every 5,721 population on average and a secondary/tertiary care facility exists for every 200,000 population. Poor use of these facilities because of inadequate quality of care and lack of availability of services represents a tremendous missed opportunity. Furthermore, public health services are disproportionately used by the poor. For example, while 75 percent of those in the richest quintile deliver in private health facilities, only 36.7 percent from the lowest quintile use private health facilities. Although demand-side efforts of health insurance may alleviate some constraints in access of private health facilities, with current OOP expenditures in using a private health facility being approximately four times higher than a public health facility, access to private health facilities is likely to continue to be a challenge for the poor.<sup>39</sup> Improving public health facilities is thus imperative to ensure quality health services for all, especially for the poor.

7. **Strengthening the public health system is thus seen to be the key to AP achieving the Health SDG (SDG 3).**<sup>40</sup> While the state is making progress in strengthening its public health system, it has sought World Bank assistance in scaling up and increasing its pace of achievement, further innovating, consolidating, and delivering more effectively to achieve better results.

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<sup>39</sup> In AP, the cost of hospitalization in a public facility is INR 4,800 on average, while in a private facility, it is INR 23,000 (National Sample Survey Office, 2014).

<sup>40</sup> SDG target 3.1 - By 2030, reduce the global MMR to less than 70 per 100,000 live births.

SDG target 3.2 - By 2030, end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births.

SDG target 3.4 - By 2030, reduce by one-third premature mortality from NCDs through prevention and treatment and promote mental health and well-being.

SDG target 3.8 - Achieve universal health coverage, including financial risk protection; access to quality essential health care services; and access to safe, effective, quality, and affordable essential medicines and vaccines for all.



**ANNEX 3: PROJECT EXPENDITURE BOUNDARY**

**Project Boundary Definition According to the Budget Chart of Accounts**

Project Expenditures	Under NHM		DH (2210)		CHFV (2211)		APVVP (2210)		FY18/19 Total (US\$, millions)	5-year Project Total (US\$, millions)
	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)		
<b>Component 1 - Improve Quality of Care</b>										
Traversing gaps for Quality Assurance under NHM	13.1	0.75	—	0.00	—	0.00	—	0.00	0.75	4.61
Minor works budget line of the directorate	—	0.00	272	0.01	272	0.04	270/272	0.56	0.61	3.75
PPP line item under NHM	—	0.00	—	0.00	—	11.83	—	0.00	11.83	72.79
Programmatic expenditure of NHM	—	80.46	—	0.00	—	1.13	—	0.00	81.60	502.08
Staff salaries of CHCs, PHCs and SCs	—	0.00	010	114.72	010	374.83	—	70.00	222.20	1,367.27
Drug budget under NHM, Directorate of Public Health and Family Welfare	—	0.00	210/212	42.00	—	0.00	—	0.00	42.00	258.44
Incentives to pharmacists under NHM	—	1.67	—	0.00	—	0.00	—	0.00	1.67	10.28
<b>Component 1 Subtotal</b>		<b>82.88</b>		<b>156.73</b>		<b>387.83</b>		<b>70.56</b>	<b>360.66</b>	<b>2,219.23</b>
<b>Component 2 - Improve Responsiveness of Public Health Services</b>										
PPP line item (estimated for patient health record system)	—	0.00	—	0.00	—	0.00	—	14.00	14.00	86.15
Information, education, and communication budget	11	1.03	—	0.00	—	0.00	—	0.00	1.03	6.34
Health Development Society funds	4.1	2.23	—	0.00	—	0.00	310/312	0.84	3.07	18.88
<b>Component 2 Subtotal</b>		<b>3.26</b>		<b>0.00</b>		<b>0.00</b>		<b>14.84</b>	<b>18.10</b>	<b>111.37</b>



Project Expenditures	Under NHM		DH (2210)		CHFV (2211)		APVVP (2210)		FY18/19 Total (US\$, millions)	5-year Project Total (US\$, millions)
	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)	Code	FY18/19 Budget (US\$, millions)		
<b>Component 3 - Increase Access to an Expanded Package of Primary Health Services</b>										
PHC and SCs staff salaries	8.1.1	34.94	—	0.00	—	0.00	—	0.0	34.94	215.01
PPP line item under NHM	18.3/6.1.3/6.3 /and so on	55.95	—	0.00	—	0.00	—	0.0	55.95	344.28
Salaries of second ANMs	8.1.1.1	13.65	—	0.00	300	2.18	—	0.0	15.83	97.41
Drug budget	6.2	11.36	—	0.00	—	0.00	—	0.0	11.36	69.92
Rent, rate, and taxes	4.2.5	0.37	—	0.00	—	0.00	—	0.0	0.37	2.26
Health and wellness center budget	1.1.7.5	3.82	—	0.00	—	29.45	310/312	13.95	47.22	290.55
Mobile medical units	2.1.1.2	2.13	0	0.00	0	0.00	0	0.0	2.13	13.11
Incentives for ASHAs	3.1.1	10.65	0	0.00	0	0.00	0	0.0	10.65	65.54
Health Management Information Systems budget	16.6	1.87	0	0.00	0	0.00	0	0.0	1.87	11.49
<b>Component 3 Subtotal</b>		<b>134.74</b>		<b>0.00</b>		<b>31.63</b>		<b>13.95</b>	<b>180.32</b>	<b>1,109.56</b>
<b>TOTAL</b>		<b>257.89</b>		<b>156.73</b>		<b>419.46</b>		<b>99.35</b>	<b>559.08</b>	<b>3,440.16</b>



## ANNEX 4: DETAILED FINANCIAL AND ECONOMIC ANALYSIS

1. The economic and fiscal analysis<sup>41</sup> considers the following aspects: equity, efficiency, cost-effectiveness, and budgetary implications and fiscal sustainability.

### Equity

2. **By strengthening the public health system, the project finances will disproportionately benefit the poor.** First, the project will improve the quality of services in public health facilities that the poor are most likely to use. Second, by setting up e-SCs in rural areas where access to doctors and pharmacies is limited, it will ensure that the project will benefit poorer households. Third, it will contribute to reducing catastrophic or impoverishing health expenditures faced by poor households through initiatives such as the expansion of e-SCs and the empanelment of private pharmacies to provide NCD medicines free of charge to patients. OOP spending was estimated at 78 percent of total health expenditure in 2015,<sup>42</sup> and the project is expected to contribute to its reduction. Fourth, it will contribute to alleviating the disproportionate economic burden that NCD care places on the poor. NCDs disproportionately affect poor and vulnerable populations through loss of income due to disability or death of a household member, recurrent management costs, and related OOP expenditures that can lead to costly coping responses such as distress asset selling.<sup>43</sup> Additionally, resources from poor households diverted to NCD care and lost income due to disability or death of a household member are resources not going toward education and other investments that could lift them out of poverty.

### Efficiency

3. **The project's focus on improving quality of care as an efficient approach to improving health outcomes is backed by evidence.** As highlighted in the Lancet Global Health Commission on High-quality Health Systems in the SDG Era,<sup>44</sup> poor quality of care is a bigger barrier to reducing mortality than insufficient access; 60 percent of deaths from conditions amenable to health care are due to poor-quality care, whereas the remaining deaths result from nonuse of the health system. Quality of care is thus expected to become an even larger driver of population health as utilization of health systems increases and as the burden of disease shifts to more complex conditions. Strengthening the quality of the primary care system in AP will also help reduce wasted resources and inefficiency by reducing the currently high patient load at hospitals or higher-level facilities for conditions that can be treated in primary care. Focus on quality of care will thus help the state make better use of scarce resources.

<sup>41</sup> A further detailed note, including assumptions and data used for the projections in this analysis is available at <http://wbdocs.worldbank.org/wbdocs/component/main>.

<sup>42</sup> India's Ministry of Health and Family Welfare Health Accounts 2014–2015.

<sup>43</sup> Karan, A., M. Engelgau, and A. Mahal. 2014. "The Household-level Economic Burden of Heart Disease in India." *Trop Med Int Health*. 19 (5): 581–91. doi: 10.1111/tmi.12281. Epub 2014 Feb 24.

<sup>44</sup> Kruk, M. E., A. D. Gage, C. Arsenault, K. Jordan, H. H. Leslie, S. Roder-DeWan, O. Adeyi, P. Barker, B. Daelmans, S. V. Doubova, M. English, E. G. Elorrio, F. Guanais, O. Gureje, L. R. Hirschhorn, L. Jiang, E. Kelley, E. T. Lemango, J. Liljestrand, A. Malata, T. Marchant, M. P. Matsoso, J. G. Meara, M. Mohanan, Y. Ndiaye, O. F. Norheim, K. S. Reddy, A. K. Rowe, J. A. Salomon, G. Thapa, N. A. Y. Twum-Danso, M. Pate. 2018. "High-quality Health Systems in the Sustainable Development Goals Era: Time for a Revolution." *The Lancet Global Health*.



4. **The focus on strengthening or redesigning primary health care in the state to manage the growing burden of NCDs is also a source of efficiency gains.** One of the primary goals of PHC strengthening is to enhance efficiency, by reorienting care toward lower (and therefore less costly) levels of the system, particularly for NCDs. At a household level, efficiency will be achieved by bringing quality services closer to the population thus reducing travel costs to higher-level facilities and increasing utilization. Improvements at CHCs and PHCs, expansion of e-SCs and mobile medical units, and the dispensation of drugs at private pharmacies will all contribute to that goal.

5. **While the evidence on PPPs is more mixed, PPPs, such as the e-SC model, can allow the state to quickly achieve health gains by leveraging their know-how and limiting public expenditure as the private sector takes on some capital investments (for example, equipment and human resources).** Private sector contracting also allows to focus limited government resources on core activities, leaving the private sector to manage ancillary activities (for example, sanitation services, equipment maintenance, and transportation services for patients) leading to efficiency gains.

#### Cost-effectiveness

6. **Early screening and management of the targeted conditions at the primary care level are arguably more cost-effective than treating NCDs once they become complicated and require specialist care.** The global evidence drawn from the Disease Control Priorities Project suggests that interventions for screening and management of some of the targeted NCDs are cost-effective according to the WHO's guideline on thresholds for acceptable costs per DALY averted.<sup>45</sup> Blood pressure management, polypill for high absolute risk cardiovascular disease, angiotensin-converting-enzyme inhibitor, and cataract surgery are all interventions for adults costing less than US\$100 per DALY averted.<sup>46</sup> Treatment of early stage breast cancer also falls in the category of less than US\$200 per DALY averted. Cost per DALY averted for screening twice in a woman's lifetime with a one-visit visual inspection strategy is estimated at US\$91 in India.<sup>47</sup> Thus, all NCD interventions are considered 'very cost effective' for AP.

7. **A cost-benefit analysis, converting the health gains achieved by the project into monetary terms by measuring the cost per DALY saved relative to per capita GDP, shows that given project expenditure of US\$559 million per year<sup>48</sup> and GDP per capita of US\$1,932 in AP (2016), the project will only have to achieve an average of 289,000 DALYs saved annually to 'break even'.** An estimated 6,190 e-SCs could have over 70 million outpatient contacts per year. Each one of those contacts would have to result in only 0.004 DALYs saved to break even.

#### Budgetary Implications and Fiscal Sustainability

8. **The strengthening of primary care in AP is not expected to create unmanageable budgetary liabilities.** This is mainly because (a) primary health accounts for approximately 19 percent of total GoAP health spending at present, and therefore even significant new spending at this level in proportional terms

<sup>45</sup> Horton, S. 2017. "Cost-Effectiveness Analysis in Disease Control Priorities, Third Edition." In *Disease Control Priorities (third edition): Volume 9*, edited by D. Jamison, H. Gelband, S. Horton, P. Jha, and R. Laxminarayan. Washington, DC: World Bank.

<sup>46</sup> Horton 2017.

<sup>47</sup> Goldie, S. J., L. Gaffikin, J. D. Goldhaber-Fiebert, A. Gordillo-Tobar, C. Levin, C. Mahé, et al. 2005. "Cost-effectiveness of Cervical Cancer Screening in Five Developing Countries." *N Engl J Med* 353: 2158–68.

<sup>48</sup> See annex 3.



would not result in a big jump in aggregate sectoral spending; (b) cost of providing screening and management of NCDs at primary care level would offset existing cost of doing so at higher level and cost of more expensive disease management for NCDs detected later in life; (c) aside from the introduction of the new MLP positions in the e-SCs, increase in demand for care should not result in significantly more HR costs, assuming providers are paid based on input (line-item budgets and salaries) and staff remain relatively stable in facilities; and (d) given the approach of leveraging the private sector, payments to private providers would constitute the bulk of additional costs. Furthermore, the budget for the health sector in the state is an estimated US\$1,261.5 million; therefore, at peak implementation, the additional expenses would amount to only 9 percent of the annual budget.





## ANNEX 5: IMPLEMENTATION SUPPORT PLAN

1. The Implementation Support Plan for the project has been developed based on the specific nature of the project activities, lessons learned from past operations in the country and sector, and the project's risk profile in accordance with the Systematic Operations Risk-Rating Tool. The plan will be reviewed once a year to ensure that it continues to meet the implementation support needs of the project.
2. **Strategy and approach for implementation support.** The implementation support strategy is based on the combination of several mechanisms that will enable enhanced implementation support to the GoAP and timely and effective monitoring. The mechanisms to be employed comprise (a) intensive supervision and hand-holding in the first year, given the range of implementing departments/directorates and the need for coordination; (b) regular technical meetings and field visits by the World Bank; (c) the Health Department and SPIU reporting based on internal monitoring; and (d) independent third-party monitoring/validation to assess and monitor progress of the project throughout its implementation. Most information would be collected through the state's system, and the remaining information will be collected either directly by the SPIU or validation of data using data triangulation, or a third-party source would be used wherever quality of reporting is poor. Verification of the DLI results would be done using third-party validation. Data would be collected through routine MIS, provider surveys, patient satisfaction and feedback surveys, facility-based quality assessments, evaluations, and community monitoring.
3. The World Bank FM, procurement, social, and environmental specialists who are based in the country office will play a vital role in successful project implementation support, given that the project includes capacity building in these areas for the department/directorate, hospitals, and/or communities. These World Bank specialists, in collaboration with the task team leader and team, are expected to provide timely, effective, and intensive support to the client.
4. **Implementation support missions.** During the first year, the project will have semiannual implementation support missions, including field visits. The semiannual missions will focus on review of the project performance against Results Framework, progress toward DLI targets, and agreement on planned actions as well as progress made on the safeguards issues. The scope of the implementation support mission will also include monitoring the GoAP's compliance with stipulated FM, procurement, and safeguards guidelines. One month before the formal review mission, the SPIU will provide to the World Bank a comprehensive progress report on project activities. In addition to the formal missions, several technical missions to the state by the World Bank team will be carried out to accelerate implementation. To ensure high quality and comprehensiveness of support considering the project design, the World Bank team will comprise not only health specialists and economists but also specialists in PPP, FM, procurement, and safeguards, with the specific team composition for each mission determined based on the requirements at that time.
5. The first implementation support mission will take place in September 2019, if the GoAP agrees, with a midterm review in April 2021, and the project closure will be in March 2023. The focus of implementation support is described in Table 5.1. Considering the complexity of the project design, the estimated annual resources required for effective implementation support will be substantial, though it will be discussed and agreed with the sector unit and country management unit.



**Table 5.1. Estimated Staff Time and Skills Needed for Effective Implementation Support**

Focus	Skills Needed	Resource Estimate (SWs)	
		First 12 months	12–48 months (per year)
Team leadership and coordination	Task team leader	9	6
Technical reviews and support, including NCD management, evaluation, and data systems and analysis	Health specialists and economist	12	6
Institutional arrangements and risk assessment	Operations specialist	8	4
Private sector specialist	Health specialist/Operations specialist (with PPP expertise)	6	6
FM and audit review	FM specialist	4	4
Procurement review	Procurement specialist	2	2
Social development	Social specialist	4	4
Environmental management	Environmental specialist	4	4

Note: SW = Staff week.