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PROGRAM APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF US\$287 MILLION
TO THE
REPUBLIC OF INDIA
FOR A
TAMIL NADU HEALTH SYSTEM REFORM PROGRAM
February 22, 2019

Health, Nutrition & Population Global Practice
South Asia Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective January 4, 2019)

Currency Unit = Indian Rupees (INR)

INR 69.683 = US\$1

FISCAL YEAR
April 1 – March 31

ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
ATLS	Advanced Trauma Life Support
BTLS	Basic Trauma Life Support
BMW	Biomedical Waste
BMWM	Biomedical Waste Management
CAAA	Controller of Aid, Accounts, and Audit
CAG	Comptroller and Auditor General
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHC	Community Health Center
CMCHIS	Chief Minister's Comprehensive Health Insurance Scheme
CME	Continuous Medical Education
CPF	Country Partnership Framework
CTF	Common Treatment Facility
DALY	Disability-Adjusted Life Year
DIMH	Directorate of Indian Medicine and Homeopathy
DLI	Disbursement-Linked Indicator
DLR	Disbursement-Linked Result
DME	Directorate of Medical Education
DMRHS	Directorate of Medical and Rural Health Services
DoF	Department of Finance
DoHFW	Department of Health and Family Welfare
DPH	Directorate of Public Health
DVAC	Directorate of Vigilance and Anti-Corruption
EC	Empowered Committee
ELCOT	Electronics Corporation of Tamil Nadu
EMS	Emergency Medical Services
ESSA	Environmental and Social Systems Assessment
FM	Financial Management
GDP	Gross Domestic Product
GoI	Government of India
GoTN	Government of Tamil Nadu
HDI	Human Development Index

HMIS	Health Management Information System
HMS	Hospital Management System
HWC	Health and Wellness Center
IFA	Iron and Folic Acid
IFSA	Integrated Fiduciary System Assessment
IFT	Interfacility Transfer
IMR	Infant Mortality Rate
IUD	Intrauterine Device
IVA	Independent Verification Agency
JICA	Japan International Cooperation Agency
mCPR	Modern Contraceptive Prevalence Rate
MIS	Management Information System
MMR	Maternal Mortality Ratio
MoHFW	Ministry of Health and Family Welfare
NABH	National Accreditation Board for Hospitals and Healthcare Providers
NCD	Noncommunicable Disease
NFHS	National Family Health Survey
NGO	Nongovernmental Organization
NHM	National Health Mission
NITI	National Institution for Transforming India
NPCDCS	National Program for Prevention and Control of Cancer, diabetes, Cardiovascular Diseases and Stroke
NPV	Net Present Value
NQAS	National Quality Assurance Standards
PAP	Program Action Plan
PBI	Performance-Based Incentive
PDO	Program Development Objective
PforR	Program for Results
PFMS	Public Financial Management System
PHC	Primary Health Center
PMU	Program Management Unit
PPIUD	Postpartum Intrauterine Device
PPP	Purchasing Power Parity
PSC	Program Steering Committee
PWD	Public Works Department
QoC	Quality of Care
RCH	Reproductive and Child Health
SBCC	Social and Behavior Change Communication
SCs	Scheduled Castes
SDG	Sustainable Development Goal
STs	Scheduled Tribes
STEPS	STEPwise Approach to Surveillance
TA	Technical Assistance
TAEI	Tamil Nadu Accident Emergency Care Initiative
TNFSDA	Tamil Nadu Food Safety and Drug Administration
TNHSP	Tamil Nadu Health Systems Project

TNHSRP	Tamil Nadu Health System Reform Project
TNMSC	Tamil Nadu Medical Services Corporation
TNUHP	Tamil Nadu Urban Healthcare Project
UHC	Universal Health Coverage
WHO	World Health Organization

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**BASIC INFORMATION**

Is this a regionally tagged project?		Financing Instrument
No		Program-for-Results Financing
Bank/IFC Collaboration	Does this operation have an IPF component?	
No	No	

Proposed Program Development Objective(s)

The Program Development Objective is to improve quality of care, strengthen management of non-communicable diseases and injuries, and reduce inequities in reproductive and child health services in Tamil Nadu.

Organizations

Borrower : Republic of India
 Implementing Agency : Department of Health and Family Welfare, Government of Tamil Nadu

COST & FINANCING**SUMMARY (US\$, millions)**

Government Program Cost	8,200.00
Total Operation Cost	5,277.75
Total Program Cost	5,277.75
Total Financing	5,277.75
Financing Gap	0.00

Financing (US\$, millions)

Counterpart Funding	4,990.75
Borrower	4,990.75
International Bank for Reconstruction and Development (IBRD)	287.00



Expected Disbursements (US\$, millions)

Fiscal Year	2019	2020	2021	2022	2023	2024	2025
Absolute	0.00	60.15	25.39	90.54	32.62	39.15	39.15
Cumulative	0.00	60.15	85.54	176.08	208.70	247.85	287.00

INSTITUTIONAL DATA

Practice Area (Lead)

Health, Nutrition & Population

Contributing Practice Areas

Climate Change and Disaster Screening

Yes

Private Capital Mobilized

No

Gender Tag

Does the Program plan to undertake any of the following?

a. Analysis to identify Program-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	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Low
6. Fiduciary No Fiduciary Risk rating has been completed to date	Moderate
7. Environment and Social Environmental Risk rating from Specialist: Moderate as of 03-Oct-2018 Social Risk rating from Specialist: Moderate as of 19-Nov-2018	Moderate
8. Stakeholders	Low
9. Other	Low
10. Overall	Moderate

COMPLIANCE

Policy

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

Yes No

Does the Program require any waivers of Bank policies?

Yes No

Safeguard Policies Triggered

Safeguard Policies	Yes	No
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓



Legal Covenants

Sections and Description

Section I.B.1(a) of the Schedule to the Program Agreement. The Program Implementing Entity shall establish within three (3) months of the Effective Date, and maintain, through out the period of implementation, a Program Management Unit (“PMU”) within the TNHSP Society, which unit shall be provided with competent, experienced and qualified staff, 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 in the carrying out of the day-to-day implementation of the Program, including compiling data on results and evidence on achievement of Disbursement-Linked Results (DLRs) for submission to the Independent Verification Agency (“IVA”) and the Bank.

Sections and Description

Section I.B.1(b) of the Schedule to the Program Agreement. The Program Implementing Entity shall by no later than three (3) months after the Effective Date, establish and maintain, throughout the period of implementation, an Empowered Committee (“EC”), to be headed by the Chief Secretary of Tamil Nadu and having members from the Departments of Finance, Planning and Development, and Health and Family Welfare, to take key financial and administrative decisions related to Program implementation.

Sections and Description

Section I.B.1(c) of the Schedule to the Program Agreement. The Program Implementing Entity shall by no later than three (3) months after the Effective Date, establish and maintain, throughout the period of implementation, a Program Steering Committee (“PSC”), to be headed by the Principal Secretary of Department of Health and Family Welfare (DoHFW) and including representatives from Department of Finance (DoF) and DoHFW, of Tamil Nadu, to provide overall oversight over Program implementation.

Sections and Description

Section I.C. of the Schedule to the Program Agreement. The Program Implementing Entity shall implement the Program Action Plan agreed with the Bank, in a manner and substance satisfactory to the Bank; refrain from amending, revising, waiving, voiding, suspending or abrogating, any provision of the Program Action Plan, whether in whole or in part, without the prior written concurrence of the Bank.

Sections and Description

Section I.D(a) of the Schedule to the Program Agreement. The Program Implementing Entity shall not later than one (1) month after the Effective Date, appoint an Independent Verification Agent (“IVA”) under terms of reference satisfactory to the Bank, to carry out the verification of compliance of DLRs and Disbursement-Linked Indicators (DLIs) as set forth in the matrix in Schedule 3 to the Loan Agreement; carry out throughout the implementation of the Program a verification process guided by the verification protocol agreed with the Bank, through the IVA, to ascertain whether the DLRs/DLIs have been achieved for the period(s) under review; furnish to the Bank corresponding verification reports, in form and substance acceptable to the Bank, prior to submission of any withdrawal application under Categories (1) to (8) of the table in Section IV.A.2 of the Schedule 2 to the Loan Agreement.

**Conditions****TASK TEAM****Bank Staff**

Name	Role	Specialization	Unit
Rifat Afifa Hasan	Team Leader(ADM Responsible)	Health Service Delivery	GHN06
Satyanarayan Panda	Procurement Specialist(ADM Responsible)	Procurement	GGOPZ
Arvind Prasad Mantha	Financial Management Specialist(ADM Responsible)	Financial Management	GGOIS
Anupam Joshi	Environmental Specialist(ADM Responsible)	Environmental Safeguards	GEN06
Sangeeta Kumari	Social Specialist(ADM Responsible)	Social Safeguards	GSU06
Bogdan Constantin Constantinescu	Team Member	Expenditure Analysis	GGOIS
Dominic S. Haazen	Team Member	Emergency and Trauma Care	GHN13
Iryna Postolovska	Team Member	Health Service Delivery	GHN03
Jorge A. Coarasa	Team Member	Private Sector Engagement	SACIN
Martha P. Vargas	Team Member	Project management	GHN06
Owen K. Smith	Team Member	Health Financing	GHN06
Rahul Pandey	Team Member	Operations Officer	GHN06
Ritu Sharma	Team Member	Project management	SACIN
Robin Kumar Thakur	Team Member	Procurement	SPACP
Son Nam Nguyen	Team Member	Quality of Care	GHN01
Victor Manuel Ordonez Conde	Team Member	Finance	WFACS

Extended Team

Name	Title	Organization	Location
Ranjan Verma	Social Safeguards Consultant	World Bank	India



INDIA
TAMIL NADU HEALTH SYSTEM REFORM PROGRAM

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I. STRATEGIC CONTEXT

A. Country and State Context

1. **India continues to be the world's fastest-growing major economy.** Growth has accelerated in the last two quarters to reach 8.2 percent in the first quarter of FY18/19. This was supported by a revival in industrial activity, strong private consumption, and a rise in exports of goods and services. At the same time, the external situation has become less favorable. The current account balance has widened on account of an increasing trade deficit (on the back of strong import demand and higher oil prices) from 0.7 percent of gross domestic product (GDP) in FY16/17 to 1.9 percent in FY17/18. Meanwhile, external headwinds—monetary policy 'normalization' in the United States coupled with recent stress in some emerging market economies—have triggered portfolio outflows from April 2018 onwards, putting additional pressure on the balance of payments. Going forward, growth is projected to reach 7.3 percent in FY18/19 and to firm up thereafter at around 7.5 percent, primarily on account of robust private and public consumption expenditure, a rise in exports of goods and services, and a gradual increase in investments. However, the current account deficit is also projected to remain elevated in FY18/19.

2. **Since the 2000s, India has made remarkable progress in reducing absolute poverty.** Between FY11/12 and 2015, poverty declined from 21.6 percent to an estimated 13.4 percent at the international poverty line (2011 purchasing power parity [PPP] 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 lower-middle-income countries (2011 PPP 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. **Tamil Nadu, with a population of 76 million, is the sixth most populous state in India.** It is among the most urbanized states—48 percent of the population resides in urban areas. Tamil Nadu's population is older compared to the national average, and a larger share of the population is of working age. The state's dependency ratio is 43 percent compared to the national average of 57 percent. Between 2000 and 2010, the population grew by 15.6 percent, but the total fertility rate has declined from 2.2 in 1998–99 to 1.6 in 2015–16. According to the 2011 Census of India, scheduled castes (SCs) represent 20 percent of Tamil Nadu's population, scheduled tribes (STs) comprise 1.1 percent, other backward classes (OBCs) form 68 percent, and other castes constitute 10.5 percent.

4. **Tamil Nadu is the second largest economy after the state of Maharashtra and has experienced steady economic growth (7.3 percent growth rate in 2013–14).** In 2015, Tamil Nadu's GDP per capita was estimated at INR 176,228 or approximately US\$2,590. According to World Bank estimates, poverty has declined considerably to around 12 percent in 2012.

B. Sectoral and Institutional Context

5. **While India has achieved substantial economic growth since 2000, the progress in health has not been commensurate.** Between 2000 and 2016, the infant mortality rate (IMR) fell from 66.6 deaths per 1,000 live births to 34.6 deaths per 1,000 live births, while the maternal mortality ratio (MMR) more than halved, falling from 374 to 174 deaths per 100,000 live births. Life expectancy has increased by six years—from 62.6 years in 2000 to 68.6 years in 2016. Despite substantial reductions in maternal and child mortality, such mortality rates remain above global averages for a country of India's GDP per capita.



Moreover, nutritional outcomes are poor—almost 38 percent of children under the age of 5 are stunted in India.

6. **National averages also mask substantial variation in health outcomes among states.** IMR, for example, ranges from 9 deaths per 1,000 live births in Manipur to 50 deaths per 1,000 live births in Madhya Pradesh.¹ Meanwhile, MMR ranges from 46 deaths per 100,000 live births in Kerala to 237 deaths per 100,000 live births in Assam. The difference in life expectancy between the worst- and best-performing states is 11 years—63.9 years in Assam compared to 74.9 years in Kerala.²

7. **Tamil Nadu ranks among the high-performing states in India with respect to human development,** attaining 3rd rank on the Human Development Index (HDI)³ among all states in India (2014). This achievement is reflected in the high literacy rate (80 percent) and vastly improved health outcomes.

8. **Despite high overall performance, there is significant variation in development among districts in Tamil Nadu.** The state comprises 32 districts and 10 corporations (see annex 1).⁴ Based on the state's HDI, the five worst-performing districts were Thiruvavur (HDI of 0.568), Villupuram (0.561), Theni (0.539), Perambalur (0.447), and Ariyalur (0.282). In addition, Ramanathapuram and Virudhunagar districts have been included in the National Institution for Transforming India (NITI) Aayog's list of 115 'aspirational districts' in India, requiring substantial improvements.⁵

9. **Tamil Nadu has made significant progress in improving reproductive and child health (RCH) outcomes, having already achieved the child health and maternal health 2030 Sustainable Development Goals (SDGs).** MMR has declined from 111 deaths per 100,000 live births in 2004–06 to 79 deaths per 100,000 live births in 2011–13. Latest health management information system (HMIS) data show a further decline to 62 deaths per 100,000 live births in 2015–16. IMR declined from 30 deaths per 1,000 live births in 2005–06 to 20 deaths per 1,000 live births in 2015–16, while the under-five mortality rate (U5MR) fell from 36 to 27 deaths per 1,000 live births in the same period. As a result, life expectancy has increased to 70 years (higher than the national average of 68.6 years), and Tamil Nadu ranks 3rd among all Indian states in the NITI Aayog Health Index.⁶

10. **One of the key strategies that the Government of Tamil Nadu (GoTN) has implemented—with support under the previous World Bank-financed operation—is the establishment of 105 Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) centers, in addition to 20 based at medical colleges.** Each of these CEmONC centers has the necessary specialists and appropriate equipment, electricity, and emergency transport that take women from their homes to CEmONC centers and from CEmONC centers to higher-level facilities if needed. The establishment of the CEmONC centers has ensured near-universal

¹ NITI Aayog, Ministry of Health and Family Welfare, and the World Bank. 2018. *Health States, Progressive India: Reports on the Ranks of States and Union Territories*.

² NITI Aayog, Ministry of Health and Family Welfare, and the World Bank (2018).

³ The HDI is a composite measure of attainment in three core dimensions of well-being: education, health, and income.

⁴ For the management of public health services, the state is divided into 32 Health Unit Districts in addition to the Chennai Corporation.

⁵ The aspirational districts were identified based on performance across 49 key indicators on health and nutrition, education, agriculture, and water resources, financial inclusion and skill development, and basic infrastructure. Two districts were selected from each state in India.

⁶ The health index is a joint initiative of NITI Aayog, the Ministry of Health and Family Welfare (MOHFW), and the World Bank to measure and rank annual performances of states and union territories. It consists of 24 indicators related to health outcomes, governance and information, and key inputs/processes. In addition to the 3rd overall ranking, Tamil Nadu ranked 1st in the key inputs/process domain and 7th in the health outcomes domain.



skilled deliveries and that no mother has to travel more than 30 minutes to access emergency obstetric and neonatal care 24 hours a day, 7 days a week. As a result, RCH now fares much better than in the early 2000s, and maternal deaths due to complications during and after pregnancy and delivery have decreased.

11. **Despite the impressive gains in RCH outcomes, challenges in RCH service delivery remain.** Child mortality in Tamil Nadu is still almost four times higher than in the state of Kerala. One of the reasons could be the vaccination coverage—only 70 percent of children 12–23 months in Tamil Nadu receive all basic vaccinations (National Family Health Survey [NFHS]-4, 2015-16). Lack of awareness about vaccination and obstacles such as child's illness and inconvenient timing of vaccination appear to be the main reasons for incomplete or non-vaccination.⁷ Furthermore, use of modern family planning methods has decreased from 60 percent in 2005–06 to 53 percent in 2015–16, a larger reduction than observed at national level. Aggregated state-level performance also masks significant variations across districts. For example, full vaccination of children age 12–23 months varies from a low of 39 percent in Nagapattinam to a high of 93 percent in Tiruppur, while the modern contraceptive prevalence rate (mCPR) varies from 23 percent in Virudhunagar to 65 percent in Coimbatore (NFHS-4, 2015–16). Thus, an estimated 30 percentage point difference exists between the 20 percent of highest-performing districts and the 20 percent of the poorest-performing districts in utilization of basic RCH services (such as full immunization for children, full antenatal care (ANC) for pregnant women, and use of modern family planning methods). In addition, utilization of RCH services is somewhat lower among STs.⁸ For instance, 77 percent of pregnant women belonging to STs attend four or more ANC visits compared to the state average of 81 percent. The timing of ANC also differs, with only 56 of pregnant women from STs seeking ANC in the first trimester. While almost all women are given iron and folic acid (IFA) during ANC, uptake of this intervention is low—only half of the women from STs take IFA for at least 100 days during pregnancy (compared to the state average of 64 percent).

12. **While RCH service utilization has increased significantly, quality of care remains a challenge.** Despite near-universal facility-based delivery, and recent reduction in maternal deaths, the MMR remains higher than in countries at similar levels of development.⁹ This points to challenges in quality of insitutional deliveries, which in turn is an indication of poor quality of care in general. Quality of ANC is also poor. While 81 percent of women receive four or more ANC checkups, only 43 percent of pregnant women receive all recommended services during the visits, reflecting challenges in quality of care. Rates of caesarean section births stand at 34 percent, which is substantially higher than global recommendations of 15 percent. As caesarean sections are associated with increased short-term risks, increased risks for future pregnancies, and higher costs, the elevated rate of caesarean sections is another indication of challenges in the quality of maternal health care.¹⁰

13. **In addition to the unfinished agenda on RCH, Tamil Nadu is dealing with a growing burden of noncommunicable diseases (NCDs).** NCDs account for nearly 69 percent of deaths and 65 percent of disability-adjusted life years (DALYs) in Tamil Nadu.¹¹ In 2017, cardiovascular disease, diabetes, and cancer

⁷ Murhekar, M. V., P. Kamaraj, K. Kanagasabai, G. Elavarasu, T. D. Rajasekar, K. Boopathi, and S. Mehendale. 2017. "Coverage of Childhood Vaccination among children Aged 12-23 Months, Tamil Nadu, 2015, India." *The Indian Journal of Medical Research* 145 (3): 377.

⁸ Scheduled Tribes are historically disadvantaged sub-populations in India.

⁹ West Bank and Gaza (MMR at 45 per 100,000 live births); Uzbekistan (36); Vietnam (54); and Ukraine (24).

¹⁰ WHO (World Health Organization). 2015. *WHO Statement on Caesarean Section Rates (No. WHO/RHR/15.02)*. WHO.

¹¹ ICMR (Indian Council of Medical Research), PHFI (Public Health Foundation of India), and IHME (Institute for Health Metrics and Evaluation). 2017. *India: Health of the Nation's States - The India State-level Disease Burden Initiative*.



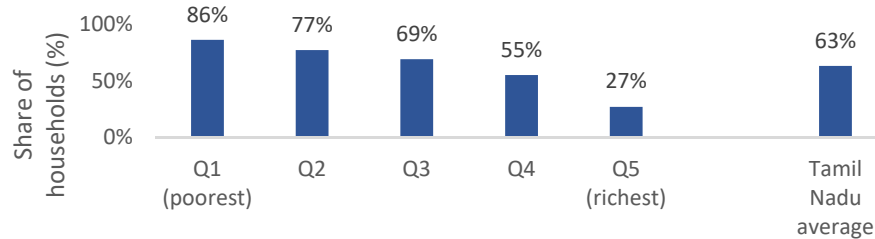
were the leading causes of death for those above the age of 40. Almost one-third of the adult population is overweight, and 12 percent of women and 10 percent of men have hypertension (NFHS-4, 2015–16). Almost 30 percent of individuals 30 years or older are screened for hypertension and 25.1 percent are screened for diabetes. However, among hypertensive adults, 15 percent of women and 5 percent of men have their blood pressure under control (NFHS-4, 2015–16), indicating serious challenges in NCD management. Coverage of NCD screening has increased considerably, but screening remains below the Organisation for Economic Cooperation and Development (OECD) averages, particularly for breast and cervical cancers. According to routine data, only 21.8 percent and 17.6 percent of women ages 30 or older are screened for breast and cervical cancers, respectively. For comparability purposes, NFHS-4 data show that only 23 percent of women between the ages of 15 and 49 years have ever been screened for cervical cancer, comparable to the national average but substantially below Kerala’s share of 61 percent. Screening of breast cancer is even lower—with only 15 percent of women ever screened (NFHS-4, 2015–16). Furthermore, mortality and morbidity associated with suicide, transport injuries, violence, and self-harm are particularly high and disproportionately affect the working-age population.¹² The state has the highest number of road traffic accident deaths in India, and the second highest suicide rate. The GoTN partnered with the private sector in 2008 to introduce the emergency transport service (108 ambulance service) under the previous World Bank-supported Tamil Nadu Health System Project (TNHSP). The 108 system provides both pre-hospital emergency and interfacility transfer (IFT) services. This has been very successful, robust, and well utilized with the GoTN now fully funding the 108 ambulance service. In 2017–18, pregnancy-related emergencies and road traffic accidents were the top two reasons for 108 ambulance services (25 percent). Compared to other high-functioning EMS systems globally, however, the percentage of IFTs is quite high and may be an impediment to the ability of the 108 system to respond to pre-hospital emergency calls.

14. **While the majority of the population seeks care at public facilities, health service utilization varies significantly by districts and socioeconomic status.** Almost 63 percent of the state’s population seeks care at a public facility when a household member is ill (which is the second highest in India after Kerala). This is indicative of the strong public sector and the public’s trust in it. It is also an illustration of the GoTN’s efforts to strengthen the public sector. However, seeking care in public facilities ranges from 42 percent in Kanniyakumari district to 82 percent in the Nilgiris. Notably, the poor are more likely to seek care at public facilities—86 percent of households in the poorest wealth quintile compared to 27 percent in the richest wealth quintile (Figure 1). Rural households are also more likely to use public facilities compared to urban households (74 percent versus 53 percent, respectively). Poor quality of care was cited by 37 percent of households and long wait times by 47 percent as reasons for not seeking care at a public health facility.

¹² ICMR, PHFI, and IHME (2017).



Figure 1. Share of Households Reporting Seeking Care at Public Facilities when a Member of the Household Is Ill



Source: NHFS-4, 2015–16.

15. **Similar to national trends, the GoTN’s health spending is quite low, representing only 1 percent of the state’s GDP (INR 1,772 or US\$25.3 per capita).** Further, out-of-pocket spending is high and represents 77 percent of total health expenditures. About 13 percent of households incur catastrophic expenditures, spending more than 25 percent of their total household expenditures on health. In 2009, Tamil Nadu launched the Chief Minister’s Comprehensive Health Insurance Scheme (CMCHIS)¹³—a state-sponsored health insurance scheme targeting families with an annual household income lower than INR 72,000.¹⁴ CMCHIS provides noncontributory cashless coverage of explicitly defined diagnostic, secondary, and tertiary procedures at contracted public and private facilities up to a maximum annual amount of INR 100,000 per family (approximately US\$1429). The scheme provides coverage to 42 million poor, near-poor, and vulnerable individuals—more than half of the state’s population. Through the CMCHIS, the Department of Health and Family Welfare (DoHFW) engages both with the public and private health sectors in the state. Health facilities in the private sector who want to engage in the CMCHIS go through a process of empanelment to qualify to receive insurance claim payments. Thus, the government’s regulatory role is critical in the implementation of the scheme.

16. **Tamil Nadu’s public health sector has been very successful in increasing the coverage of health services for its citizens, but institutional and system challenges remain and need to be tackled to achieve the next level of performance.** The public health sector, headed by the Minister of Health and Family Welfare, is operationally managed by the Secretary of the DoHFW. There are 10 budget-holding entities: the Secretariat, seven directorates and two societies. Within this context, several institutional and system challenges have been identified. First, while Tamil Nadu had one of the most innovative and comprehensive HMIS in India, it has now become outdated and fragmented. Facility data are not aggregated automatically on a regular basis. Comprehensive data are not visible to all directorates and societies in the DoHFW. The information accessible by the public is limited to a selection of RCH indicators. This current data structure hampers the use of data for decision making and accountability. Second, DoHFW directorates and societies tend to work in silos with little integration and coordination. Third, centrally sponsored schemes—especially cross-cutting health system strengthening initiatives—need to be better integrated into the state’s health program for better efficiency and effectiveness. Fourth, clinical governance has not been systematically introduced into public health facilities. Finally, while there are emerging innovations for citizen voice and agency, they remain fragmented. Formal mechanisms are needed to consolidate various accountability interventions at different levels among citizens, providers, and the government. Thus, Tamil Nadu needs to tackle these institutional and system challenges to better

¹³ The objectives of the CMCHIS are to ‘... provide quality health care to eligible persons through empaneled government and private hospitals and to reduce the financial hardship for enrolled families and move toward universal health care (UHC) by effectively linking with the public health system.’

¹⁴ In addition, the CMCHIS also provides coverage to families who are members of 26 welfare boards, including agriculture, construction, manual laborers, auto rickshaw drivers, artists, tribal persons, and orphans.



integrate data, service delivery, and management to take public health sector performance to the next level.

C. Relationship to the CAS/CPF and Rationale for Use of Instrument

17. **The proposed Program builds on a solid foundation of previous World Bank engagement.** The TNHSP—a US\$210 million credit (2005–15)—contributed to significant improvements in RCH services and enabled the GoTN to pilot several initiatives in NCDs. It also strengthened state-level capacity to procure pharmaceuticals and medical supplies as well as repair and maintain medical equipment. Because of that engagement, the Tamil Nadu Medical Services Corporation (TNMSC)—the GoTN’s procurement agency for medicines and equipment—has adopted the World Bank procurement procedures as its own. The TNSHP was rated as Satisfactory for outcome by the Independent Evaluation Group.

18. **The proposed Program is consistent with the World Bank Group Country Partnership Framework (CPF) FY18–22, July 25, 2018, discussed at the Board on September 20, 2018 (Report No. 126667-IN).** The proposed Tamil Nadu Health System Reform Program (TNHSRP) will support the CPF’s ‘what’ of human capital investments (which is a CPF Focus Area) through improving quality and access to health care. It will also support two of the ‘hows’ of the CPF: strengthening public sector institutions and generating lessons for other states (the latter referred to as ‘Lighthouse India’ in the CPF). Many of the priority interventions would address systematic strengthening of the public health sector to alleviate institutional rigidities, align incentives, and strengthen accountability mechanisms. Tamil Nadu has one of the strongest and well-functioning public sector delivery systems for health in India. Through sustained political commitment, a stable policy environment, and continuous effort, the GoTN has been able to build a reliable public sector for health. The proposed support to Tamil Nadu piggybacks on a functioning public sector and provides an opportunity for the World Bank to engage on a more advanced health agenda through a systems-based approach for improving service delivery. The operation also provides opportunities for the private sector to benefit from improved stewardship and regulatory capacity of the DoHFW. Through this innovative operation, Tamil Nadu can serve as a model for how to take health system performance to the next level by investing in the public sector and offer lessons to other states that will be facing similar challenges in the future.

19. **The proposed Program also contributes to the attainment of SDG 3 and the Health, Nutrition and Population Global Practice goal of ending preventable deaths and disability through UHC.** The relationship between health and wealth is well established with better health resulting in enhanced cognitive development, increased human capital, and a more productive labor force who are economically better off with intergenerational dividends.¹⁵ The proposed Program’s focus on improving RCH service delivery in the worst-performing regions in Tamil Nadu will help bridge the gap with those better off. Thus, the proposed Program will also contribute to the World Bank’s twin goals of eliminating extreme poverty and boosting shared prosperity.

20. **The need to shift from paying for inputs to paying for results has been acknowledged as crucial for Tamil Nadu to move to the next level of performance, and the state government is fully committed to it.** The Government wants to enhance efficiency, effectiveness, and impact of its current health sector program, and using a Program-for-Results (PforR) instrument to support the proposed TNHSRP will provide a much greater focus on outputs and outcomes through better alignment of expenditures and

¹⁵ 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. “Developmental Potential in the First 5 Years for Children in Developing Countries.” *Lancet (London, England)* 369 (9555): 60–70.



incentives with results. The data and fiduciary systems of Tamil Nadu are adequate for the proposed PforR operation, and the DoHFW has a track record that shows strong implementation capacity. In addition, as the PforR uses government fiduciary systems, it will allow the government flexibility in planning and implementation which will thereby also improve efficiency. There is a well-defined program (described in the next section) with reliable annual budgets. As states in India are increasingly moving toward results-based financing approaches, this is a good opportunity for the GoTN to focus on results and further strengthen capacity required for effective results monitoring and fiduciary systems.

II. PROGRAM DESCRIPTION

A. Government Program

21. **The government health program (“p”) of Tamil Nadu aims to achieve SDG 3 “to ensure healthy lives and promote well-being for all at all ages.”** As outlined in *Vision 2023*, this involves strengthening primary and secondary care centers and upgrading tertiary care hospitals. A special focus is given to NCDs using a two-pronged strategy: (a) preventing NCDs through population-based interventions to raise awareness and induce lifestyle changes and (b) improving the capacity for early screening, diagnosis, treatment, and follow-up in health facilities. Trauma and disaster management systems will be strengthened to ensure that an emergency patient reaches the hospital within an hour. To implement Vision 2023, the DoHFW develops annual health policy notes which lay out the priority areas and interventions for that year. A key focus of the 2018–19 Policy Note is to bridge intradistrict and interdistrict disparities by strengthening existing government programs and schemes to address the quality and infrastructure gap in the state. Additionally, there has been a recent state-level effort to draft policies for specific diseases and programs—including cardiovascular disease, diabetes, mental health, blood disorders, and trauma care. The new vision for the sector is very well aligned with emerging public health issues, and the state has also proposed resource requirements for implementation of these policy priorities.

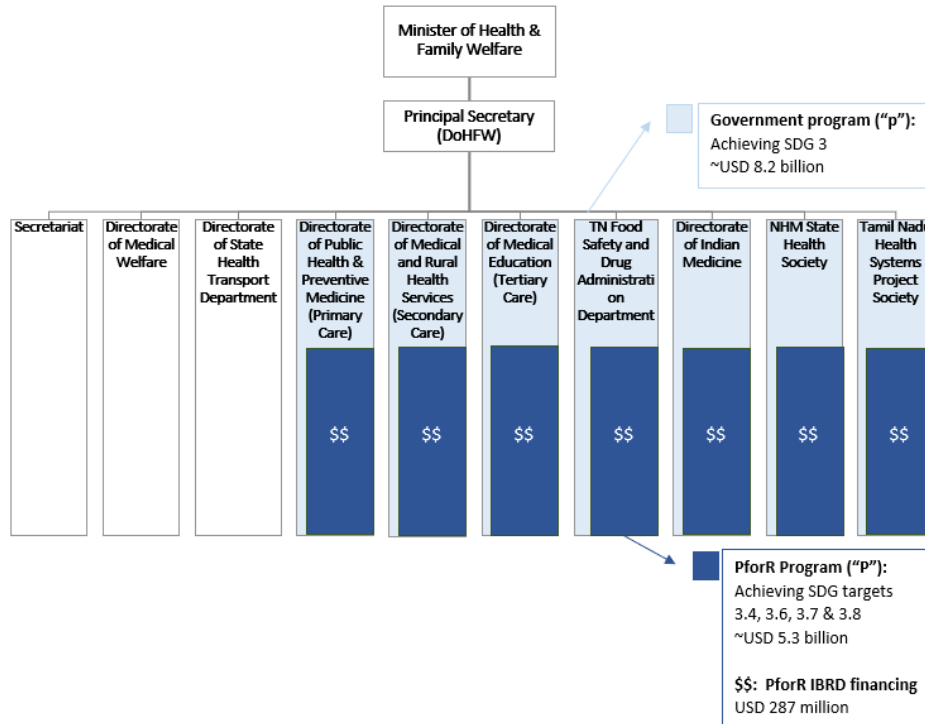
22. **The government health program comprises the work programs implemented by five of the directorates and two societies within the DoHFW with a combined estimated budget of US\$8.2 billion over the next five years.** These key directorates and societies most directly associated with SDG 3 are the Tamil Nadu Health Systems Project (TNHSP Society), Directorate of Public Health and Preventive Medicine (DPH), Directorate of Medical and Rural Health Services (DMRHS), Directorate of Medical Education (DME), Directorate of Indian Medicine and Homeopathy (DIMH), and Tamil Nadu Food Safety and Drug Administration (TNFSDA), and National Health Mission (NHM) Society. The DPH oversees primary health care, while secondary and tertiary care are overseen by the DMRHS and DME, respectively. The TNHSP Society—a society established for the World Bank-funded project in 2005—is now responsible for administering the 108 ambulance service, the CMCHIS, and the Japan International Cooperation Agency (JICA)-funded Tamil Nadu Urban Healthcare Project (TNUHP). The NHM Society aims to strengthen public health management and service delivery by providing additional flexible resources which enables innovations at the local level and addressing any gaps in the system, including for reproductive, maternal, newborn, child, and adolescent health; communicable diseases; NCDs; urban health; mental health; and quality of care. The TNFSDA carries out activities related to drug safety, quality control of drugs, testing food samples, and ensuring safe food for communities. Among the responsibilities of the DIMH and the TNFSDA is the promotion of healthy lifestyles, including yoga and behavior change campaigns. The TNFSDA is also responsible for salt reduction and tobacco control programs.



B. PforR Program Scope

23. The proposed Program (“P”) is a well-defined subset of the government program (“p”) aiming specifically to achieve SDG 3 targets 3.4, 3.6, 3.7, and 3.8.¹⁶ The Program comprises interventions to achieve SDG 3 targets related to reducing mortality from NCDs and injuries, providing universal access to reproductive health services, and ensuring quality services as part of UHC. Such interventions are reflected in nine expenditure categories of the 2019–24 work program of the seven directorates and societies (see technical assessment summary for details). The budget for the Program over the next five years is estimated at US\$5.3 billion, of which IBRD financing would be US\$287 million, representing 5.4 percent of the Program budget. Figure 2 illustrates the relationship between the government health program and the Program to be supported by the PforR. The specific expenditure categories included in the Program are salaries, payments for professional and special services, advertising and publicity, training, minor works, repairs and maintenance, and consumables to a limited extent (machinery and equipment, materials and supplies, and computers and accessories). Exclusions from the Program are major constructions, medicines, the JICA-financed TNUHP, and high-risk activities. The latter are defined as activities which (a) are judged to likely have significant adverse impacts that are sensitive, diverse, or unprecedented on the environment and/or affected population and (b) involve procurement of goods, works, and services under high-value contracts.

Figure 2. Scope of Government Health Program (“p”) and Program (“P”) Supported by PforR



¹⁶ SDG target 3.4 to reduce by one-third by 2030 premature mortality from NCDs through prevention and treatment and promote mental health and well-being; 3.6 to halve by 2020 the number of global deaths and injuries from road traffic accidents; 3.7 to ensure by 2030 universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs; and 3.8 to 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.



Table 1. Program Financing

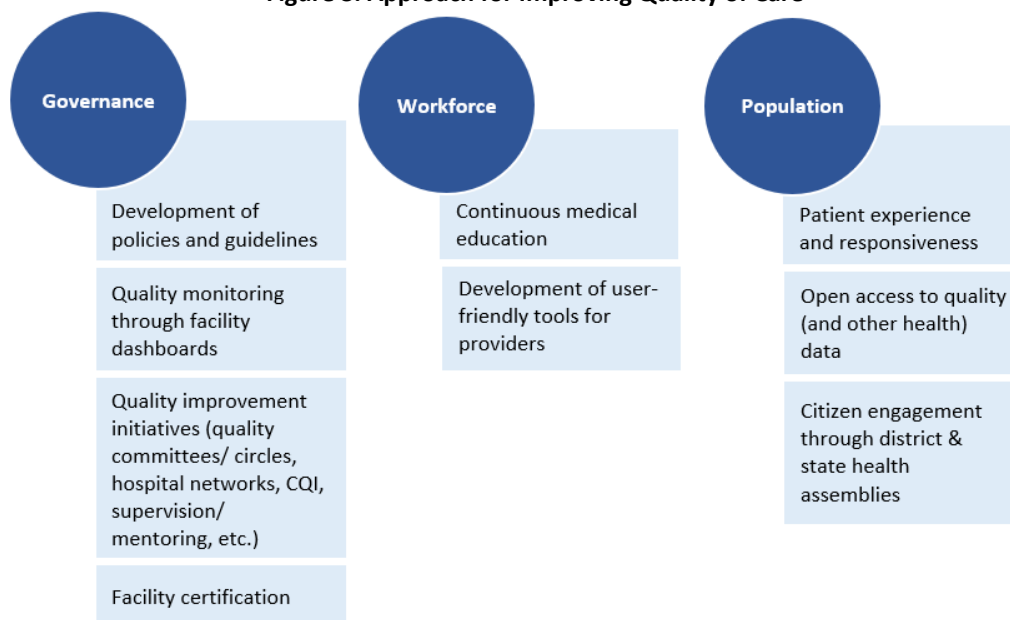
Source	Amount (US\$, millions)	% of Total
Counterpart Funding	4,990.75	94.56
International Bank for Reconstruction and Development (IBRD)	287.00	5.44
Total Program Financing	5,277.75	

24. The Program has three key result areas with a combination of both technical interventions specific to each result area and cross-cutting interventions that contribute to achieving results across the three result areas. These cross-cutting interventions aim to strengthen institutions and state capacity and expected outputs/intermediate results in the Program theory of change.

Result Area #1: Improved Quality of Care

25. **Recognizing that there is no single silver bullet in quality of care, the Program embraces a multipronged approach to quality improvement.** It is built around the same key universal actions for improving quality of care as outlined in the Lancet Global Health Commission on High Quality Health Systems in the SDG Era:¹⁷ (a) govern for quality, (b) transform the health workforce through competency-based clinical education, and (c) ignite the demand for quality in the population and improve accountability. The Program addresses each pillar through various quality improvement interventions as illustrated in Figure 3. These interventions are aligned with best global practices, and the focus on clinical processes rather than structural interventions is supported by global evidence.¹⁸

Figure 3. Approach for Improving Quality of Care



¹⁷ Kruk, M. E., A. D. Gage, C. Arsenault, K. Jordan, H. H. Leslie, S. Roder-DeWan, and M. English. 2018. "High-quality Health Systems in the Sustainable Development Goals Era: Time for a Revolution." *The Lancet Global Health*.

¹⁸ Quality of care encompasses three dimensions: structure (that is, inputs); clinical processes (that is, interaction between health workers and patients); and patient outcomes (that is, clinical outcomes, morbidity, and mortality).

Smith, O., and Nguyen, S. N. 2013. *Getting Better: Improving Health System Outcomes in Europe and Central Asia*. The World Bank.



26. First, the Program will improve governance through the development of clinical protocols/guidelines; monitoring quality of care using facility dashboards; introducing and scaling up clinical governance and other quality improvement initiatives (quality committees, hospital quality networks, continuous quality improvement, and strengthened supervision/mentoring); and facility certification. With respect to certification, the Program supports national accreditation for 370 primary-, secondary-, and tertiary-level health facilities in the public sector. Two types of certification will be sought: National Quality Assurance Standards (NQAS) for primary- and secondary-level facilities and National Accreditation Board for Hospitals and Healthcare Providers (NABH) for tertiary-level facilities (medical colleges). The former has been used in the public sector in India while the latter has been used in the private sector. Tamil Nadu currently has three public secondary hospitals certified with NQAS or NABH and four primary health centers (PHCs) and community health centers (CHCs) certified with NQAS. This set of quality improvement measures will improve accountability by strengthening the feedback loops within health facilities as well as between health facilities and the state.

27. Second, expansion of the continuous medical education (CME) program and development of user-friendly decision support tools for providers will strengthen the workforce. CME will be expanded to include not only physicians but also nurses and paramedics. These interventions together will strengthen both clinical quality of care at a provider level as well as the state's regulatory role.

28. Finally, the Program will engage the population through the development and introduction of patient experience questionnaires, making quality and other data accessible to the public, and conducting district and state health assemblies. The quality dashboard and patient experience survey will ignite the demand for quality in the population and improve accountability by strengthening the feedback loops between citizens and facilities as well as between facilities and the state. The health assemblies will strengthen the feedback loop between citizens and the state.

29. **Two disbursement-linked indicators (DLIs) directly support this result area.** DLI #1 is a scaleable indicator with an allocation of US\$43.7 million and DLI #2 is a scaleable indicator with an allocation of US\$38.2 million. DLI #1 supports institutional reforms to support quality improvement including the development and adoption of a Quality of Care (QoC) Strategy, development and rollout of the quality dashboard, and other quality improvement initiatives. DLI #2 supports the accreditation of public facilities. DLI #2 is also a prior result, with the expectation that 11 primary- and 34 secondary-level facilities will receive NQAS certification before signing of the loan. In addition, other DLIs that are cross-cutting in nature and described at the end of this section also support improvements in quality of care (DLIs #6, #7, and #8).

Result Area #2: Strengthened Management of Non-Communicable Diseases and Injuries

30. **The second result area focuses on enhancing the management of NCDs, associated risk factors and injuries.** NCD interventions under the Program represent the continuation and further scaling-up of the successful Tamil Nadu NCD initiatives previously supported by the World Bank, mainstreamed into Tamil Nadu's health sector activities, and fed into the National Program for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS). Tracer conditions for NCD response supported by the Program include hypertension, diabetes, cervical cancer, breast cancer, oral cancer, and mental health. NCD interventions under the Program focus on the following areas: (a) health promotion and NCD prevention, (b) population-based screening of NCDs among the eligible population, (c) treatment and follow-up, and (d) improvement of monitoring and evaluation related to NCDs. To improve health promotion and NCD prevention, a comprehensive social and behavior change communication (SBCC) strategy will be developed that includes multiple layers of engagement with patients, health providers,



and communities through various channels of communication. As part of the SBCC strategy, patient empowerment mechanisms will be established to transform patients, especially those with chronic conditions, from being passive recipients of care into proactive participants who are equipped with knowledge and skills for self-management of their conditions. To improve coverage of screening for NCDs, the Program will support the implementation of population-based screening for which new guidelines have been issued. Under the new guidelines, field functionaries (Accredited Social Health Activist, Women Health Volunteers, and Anganwadi Workers) are expected to make house visits, raise awareness of NCDs and risk factors, screen for hypertension and diabetes, and refer to a PHC for further follow-up. This population-based screening approach will be integrated with the establishment of health and wellness centers (HWCs) and strengthening of PHCs at the lowest level to improve treatment and follow-up for patients diagnosed with NCDs. In addition, the Program will contribute to strengthening lab services and improving health provider capacity to address mental health. To improve monitoring and evaluation related to NCDs, the Program will include the development of NCD care cascades for selected tracer conditions (for example, hypertension and diabetes), as well as strengthening of data on NCDs and mental health for better planning and management. While the Program will focus on NCD response within the health sector, the comprehensive NCD response will require a multisectoral approach. To facilitate this approach, a multisectoral coordination mechanism will be established to support the state's NCD response. Many of the quality of care interventions discussed under Result Area #1 will also benefit NCD management.

31. **Given the high prevalence of road traffic accidents and other injuries, the Program scope will include addressing injuries.** Tamil Nadu has an advanced Emergency Medical Services (EMS) work plan which adequately covers both pre-hospital and in-hospital EMS. The Program will support the implementation of the EMS work plan, including emphasis on further strengthening the 108 ambulance services to improve pre-hospital care, including improvements in IFT protocols and expansion of the 108 ambulance fleet. The Program will also improve in-hospital care by strengthening the provision of 24x7 trauma care services at Level 1 and Level 2 emergency departments and establishment of a trauma registry. Under the Program, as part of the Tamil Nadu Accident and Emergency Care Initiative (TAEI) initiative, Level 3 and Level 4 training will be provided to emergency department trauma care providers and other health care workers to strengthen both pre-hospital and in-hospital care.

32. **The following two DLIs directly support this result area.** DLI #3 is a scaleable indicator with an allocation of US\$48.9 million, and DLI #4 is a scaleable indicator with an allocation of US\$17.7 million. DLI #3 on diabetes and hypertension under control reflect efforts in prevention, screening, treatment and follow up (including patient tracking) of NCDs and their associated risk factors. DLI #4, which addresses the management of injuries, includes intermediate results in both pre-hospital care (improved IFT in the 108 ambulance service) and in-hospital care (the establishment of trauma registries and strengthening provision of services in trauma centers). Cross-cutting DLIs #6, #7 and #8 also support improvements in management of NCDs and injuries.

Result Area #3: Reduced Equity Gaps in Reproductive and Child Health

33. **A special focus will be maintained in nine priority districts, which constitute the bottom quintile of the RCH indicators in the state and have a relatively large proportion of tribal populations.** The six priority districts based on poor performance on RCH indicators are Ariyalur, Ramanathapuram, Theni, Thoothukkudi, Tirunelveli, and Virudhunagar. Three indicators have been chosen to assess progress in this domain: full immunization, full ANC, and modern contraceptive prevalence rate. The three additional districts with relatively large ST populations are Dharmapuri, The Nilgris, and Tiruvannamalai.



34. **Interventions in the Program to reduce inequities between districts focus on a combination of supply- and demand-side interventions to support increased utilization of RCH services.** The state provides mobile outreach services for tribal populations through 20 mobile medical units operated by nongovernmental organizations (NGOs) in tribal blocks. The mobile outreach team offers minor ailment treatment, antenatal screening, NCD screening, and lab tests. Drugs are also provided free of charge. Additional supply-side interventions that will be introduced through the Program include better provision of quality RCH services as indicated by NQAS certification of primary and secondary care facilities. Furthermore, maternity stay wards will be established in remote areas to facilitate continuum of care before, during and after delivery which will positively impact both immunizations and contraceptive uptake. Other quality of care interventions under Result Area #1 will also benefit the provision of RCH services. Demand-side interventions include the development and implementation of the SBCC strategy tailored to these priority districts. A household RCH survey will be administered in the priority districts to not only track progress on the service coverage indicators (and DLIs) but also better assess demand-side barriers over time which will also facilitate course corrections in implementation as needed.

35. **The following DLI directly supports this result area.** DLI #5 is a scaleable indicator with an allocation of US\$56.5 million. It supports and tracks the utilization of three RCH services in the priority districts. They are (a) full immunization of children under age 2, (b) full ANC for pregnant women, and (c) modern contraceptive prevalence rate among women of reproductive age. In addition, DLI #2 on certification of public health facilities also supports this result area through higher payments for certification of facilities in the priority districts. Finally, the cross-cutting DLIs (#6, #7, and #8) also support results on equity in RCH services.

Cross-Cutting Initiatives to Strengthen Institutional and State Capacity to Achieve the Above Results

36. **The Program also supports cross-cutting initiatives to strengthen institutional and state capacity to achieve the above three result areas.** These interventions aim to improve ‘how’ the sector operates and complement the technical interventions discussed above in the three result areas (‘what’ specifically the sector does). As such, these interventions fall along the causal chain of results on quality of care, NCDs and injuries management, and RCH equity. Good practices and innovations from Tamil Nadu are being scaled up while others from around the world are being introduced through the Program to improve management of the public health sector, increase transparency, and strengthen accountability. These key ‘hows’ will enable Tamil Nadu to move from a focus on access to an increasing focus on quality of care. These systematic reforms will also better position the state to tackle emerging disease patterns that require a different approach to service delivery while simultaneously closing the remaining gaps on last mile delivery of basic RCH services. Finally, the PforR instrument—with a focus on achievement of outputs and outcomes—will help the sector realign planning, budgeting, expenditures, and coordination to defragment implementation and ensure the achievement of results. With this innovative and forward-looking approach, Tamil Nadu will offer lessons and set the stage for other states to follow suit. Box 1 below provides details about these initiatives and how they will enhance public health sector management.



Box 1. Enhancing Public Sector Management of the Health Sector

There is no universal definition of what ‘good management’ is. The management literature for both private and public organizations is full of frameworks, examples, and methods for improving the quality of management in organizations. For the health sector, the same applies. Health management systems across countries vary substantially, and experts constantly debate the supremacy of one approach over another to reach objectives of coverage, quality, equity, and efficiency.

Despite variations across organizations and countries, there are several common underlying principles that characterize effective management. These include strong customer focus; clear mission statement with principles that all staff know and share; staff recognition, empowerment, and training; clear organizational structure with processes that function as a coherent and integrated system; constant striving for improvement; decision making based on reliable, relevant, timely data; and transparency and accountability of its operations.

The health public sector administration in Tamil Nadu has been very successful in increasing the coverage of health services for its citizens and introducing innovative approaches to tackle emerging needs. It ranks third in the country’s Health Index and is generally respected as one of the best in the country. However, taking the system from great to excellent will require a change in ‘how’ the health sector is managed. To improve public sector management, the GoTN has already embarked upon reforms, which are not limited to the health sector alone. For example, the Treasury systems of Tamil Nadu are currently being strengthened through the implementation of an Integrated Human Resources and Financial Management System that will bring operational efficiencies in the Treasury processes. The system is currently being tested and is expected to be fully operational in FY19/20. In addition, the GoTN has slowly started to move toward more transparent procurement processes, including through the decision to implement e-procurement. Given the GoTN’s desire to strengthen public sector performance, this Program—as described below—supports not only ‘what’ interventions but also ‘how’ interventions to strengthen the common pillars of management.

Shared principles, common vision, and setting benchmarks. The GoTN has been successful in articulating a clear high-level statement for achieving SDG 3 on health and well-being. However, at the organizational and operational levels, a common set of goals and a framework for achievement need to be developed. It is important for all stakeholders in the various directorates to understand how their annual work plans add up and contribute to the DoHFW’s medium- and long-term goals. This is critical to make sure that all staff share the same vision and ultimately work toward the same common goals. It is also important to support the move from input-oriented work to outcome-focused management. Benchmarking with quantifiable results-oriented indicators is the next step, and the Program will support this through a number of initiatives, including the development of a Vision 2023 Health Strategy that will lay out 10-year policy priorities, goals, and quantifiable results indicators to measure progress toward the goals.

Strengthening the content, quality, accessibility, and use of data and evidence for decision making. Currently, data sources are not integrated. Data collected at facility level is not consistently and regularly aggregated into one common database, and the reported data are visible in select portions to relevant actors. Furthermore, all data are not visible to all in the DoHFW. Countries around the world have invested heavily in HMIS, including having single patient information records that are shared among physicians and contain historic records. These systems have had very positive effects on the quality of patient care and costs, as well as on management of the health sector. To improve data and its use, the Program will strengthen HMIS, integrate data sources into an online database, and introduce electronic patient medical records. In addition, the Program will support operational research, implementation research, and health system research to inform decision making, enable course corrections, and generate lessons for Tamil Nadu as well as other states.

Increasing transparency and accountability of operations. Public administrations around the world, not only in health but in a variety of sectors, have embarked on sharing performance data and indicators to communicate progress toward previously-stated standards and benchmarks. In the health sector, the Government of India (GoI) introduced this idea with the disclosure of select RCH data by states in an online portal. The Program will support the GoTN in building on this with an expanded set of data that will additionally include NCD and quality indicators. In addition, to increase citizen empowerment and social accountability of the health sector to its citizens, the



Program will support the convening of district and state health assemblies using the Panchayati Raj system. This will improve voice and agency of citizens through collective action while also raising the visibility of the health concerns and needs of communities.

Better coordination and integration of implementation. The Tamil Nadu DoHFW has untapped opportunities and synergies due to limited coordination between teams. The organogram of the Tamil Nadu DoHFW illustrates the 10 budget-holding directorates and societies that could work together to deliver much more efficient and higher quality health services. For example, there are separate directorates for primary-, secondary-, and tertiary-level facilities, as well as for specific disease areas, that carry out their key functions of planning, budgeting, and implementation of activities largely in isolation. Centrally sponsored schemes—especially very critical initiatives on cross-cutting health system strengthening—could also be better integrated into the state’s health program for a more efficient approach to service delivery and sector planning. Better coordination and integration would reduce the fragmentation and inefficiencies in the current system and allow for better planning and budgeting across the directorates for harmonization on the front lines of service delivery. The Program will facilitate this by introducing a set of cross-cutting interventions that will bring these vertical entities together to foster greater horizontal integration.

37. **The following three DLIs directly support this cross-cutting agenda:** DLI #6 is a scaleable indicator with an allocation of US\$36.5 million, DLI #7 is a scaleable indicator with an allocation of US\$30.75 million, and DLI #8 is a non-scaleable indicator with an allocation of US\$14 million. DLI #6 aims to stimulate strengthening the content, quality, accessibility, and use of the health information system for decision making. DLI #7 is about building state capacity to improve planning and implementation, including performance-based management. DLI #8 supports transparency, collaborative social accountability, and consolidation of citizen engagement through annual district and state health assemblies. This will further strengthen the feedback loops between citizens and the state.

38. **The theory of change for the Program is illustrated in Figure 4, starting with challenges identified and followed by the inputs, expected outputs and intermediate results, and expected outcomes.** As indicated, a subset of intermediate results and expected outcomes have been selected as DLIs.

C. Program Development Objectives (PDO) and PDO Level Results Indicators

39. **The PDO is to improve quality of care, strengthen management of non-communicable diseases and injuries, and reduce inequities in reproductive and child health services in Tamil Nadu.**

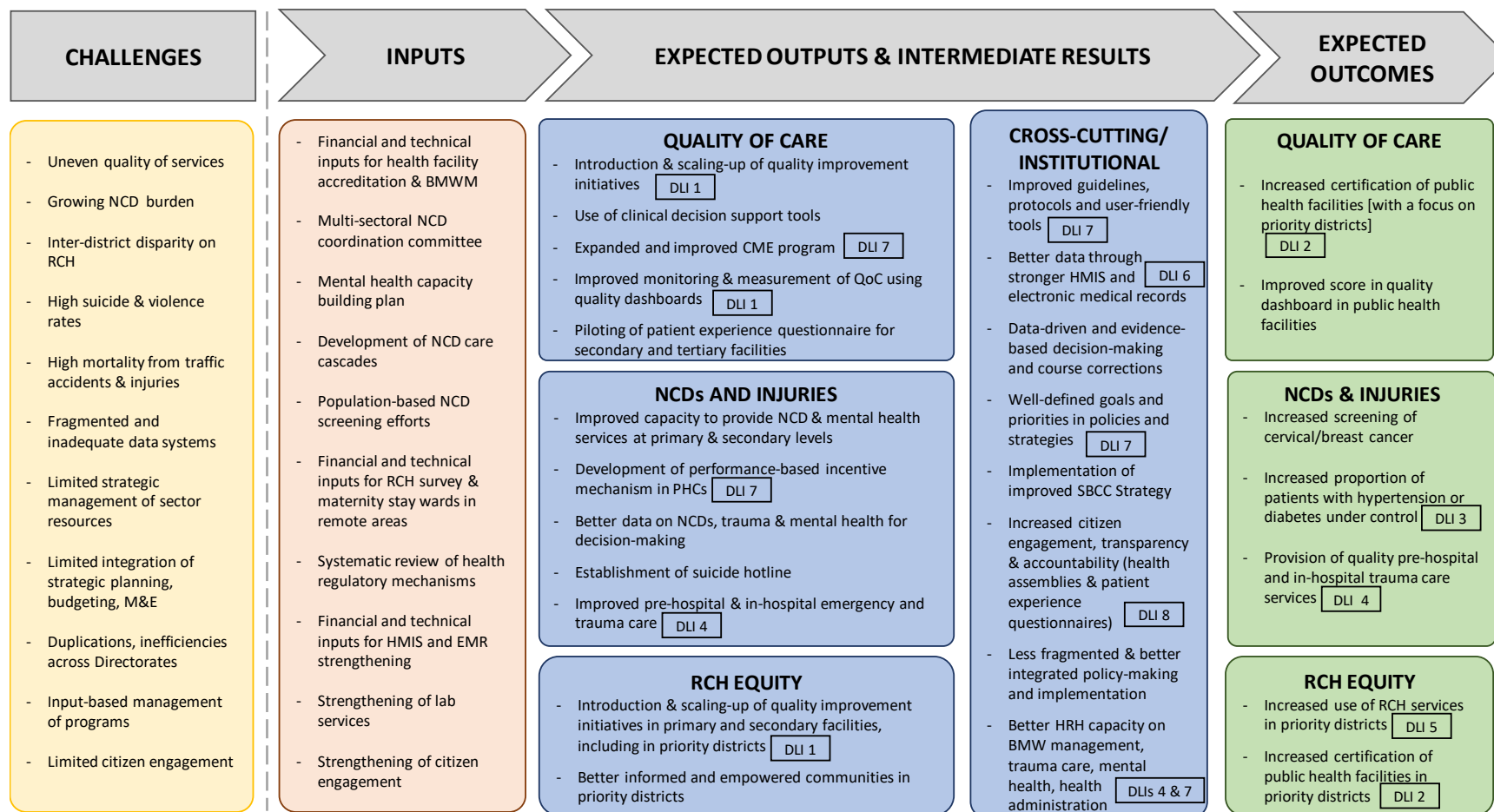
40. **The PDO will be achieved by supporting strengthening of the Tamil Nadu Health System.** The Program supports a combination of technical interventions and cross-cutting institutional strengthening interventions to achieve the PDO results. The outcome indicators in Table 2 will be used to measure the achievement of the three parts of the PDO. Intermediate outcome indicators can be found in annex 2.

Table 2. PDO-Level Results Indicators

PDO-Level Results Indicators	Quality of Care	NCDs & Injuries	Equity
1. Increased number of public facilities with quality certification (primary, secondary, and tertiary care) (with a focus on priority districts)	✓		✓
2. Improved scores in quality dashboard for primary, secondary, and tertiary facilities	✓		
3. Increased screening in public sector facilities for cervical and breast cancers		✓	
4. Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control	✓	✓	
5. Improved provision of quality trauma care services	✓	✓	
6. Increased utilization of reproductive & child health services in priority districts			✓



Figure 4. TNHSRP Theory of Change





D. Disbursement-Linked Indicators and Verification Protocols

41. **The DLIs for the Program, a combination of outcome and intermediate results, are as follows.**

The DLI matrix and verification protocol in annex 3 indicate which DLIs are timebound, non-timebound, scaleable, and non-scaleable.

Table 3. Disbursement-Linked Indicators

DLI #	DLI	Quality of Care	NCDs and Injuries	Equity	Cross-Cutting
1	Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities	✓			
2	Increased number of public facilities with quality certification (primary, secondary, and tertiary care facilities) (Prior Result: 11 primary and 34 secondary level facilities)	✓		✓	
3	Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control	✓	✓		
4	Improved provision of quality trauma care services	✓	✓		
5	Increased utilization of reproductive and child health services in priority districts			✓	
6	Strengthened content, quality, accessibility, and use of data for decision making				✓
7	Strengthened coordination, integration, performance-based management, learning, and other cross-cutting functions for better results				✓
8	Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)				✓

42. **The achievement of the prior results and DLIs would trigger World Bank disbursements to the Program.** The DLIs reflect the critical areas the GoTN has to address to push health sector performance to the next level. They indicate the combined effect of a set of specific technical interventions and institutional strengthening interventions. The verification protocol for the DLIs is described in detail in annex 3. An independent verification agency (IVA) will verify achievement of the DLIs based on the agreed protocol. In addition, to report progress on hypertension and diabetes management (DLI #3), a STEPwise approach to Surveillance (STEPS)¹⁹ survey will be conducted in Year 1 (to establish baseline), Year 3, and Year 5; a household survey will be conducted in Year 2 and Year 4 in priority districts to quantify utilization of RCH services (DLI #5).

III. PROGRAM IMPLEMENTATION

A. Institutional and Implementation Arrangements

43. The implementer of the proposed Program is the DoHFW. Within the DoHFW, the five directorates and two societies are the critical actors in the Program (Table 4). In addition to implementing selected activities, the TNHSP Society will be the Program coordinator. To facilitate this coordination function, a TNHSRP Program Management Unit (PMU) will be formed within the TNHSP Society no later than three months after effectiveness. The DoHFW has already sanctioned a Project Planning Team of 24 positions with staff from the TNHSP Society as well as additional staff. This Project Planning Team will

¹⁹ The WHO STEPwise approach to Surveillance (STEPS) for NCDs is a simple, standardized method for collecting, analyzing, and disseminating data related to the main risk factors for NCDs.



transition into the TNHSRP PMU once the PforR operation becomes effective. Within one month after effectiveness, a third-party IVA will be contracted to verify the achievement of DLIs using the agreed verification protocols. As the entity responsible for reporting on results, the TNHSRP PMU will compile the data on results and evidence of DLI achievement for submission to the IVA and the World Bank. The TNHSP Society, DPH, DMRHS, DME, NHM Society, DIMH, and TNFSDA will implement the Program activities. Table 4 indicates the roles and responsibilities of each directorate and society of DoHFW with respect to each DLI. The Department of Finance will provide budget and political support to the DoHFW for Program implementation and receive DLI disbursements.

Table 4. Roles and Responsibilities with Respect to the DLIs

DLI		Responsibilities of Directorates and Societies						
		TNHSP Society	DPH	DMRHS	DME	NHM Society	DIMH	TNFSDA
DLI #1	Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities	Development and adoption of QoC Strategy Development and launch of quality dashboard for primary, secondary, and tertiary facilities Government order issued detailing the quality improvement initiatives endorsed	Implement quality improvement initiatives and quality dashboard in health facilities			Support the TNHSP Society in developing and monitoring QoC strategy, quality initiatives, and quality dashboard		
DLI #2	Increased number of public facilities with quality certification (primary, secondary, and tertiary care facilities)	Coordinate, hire gap assessment agency, and develop quality improvement plans for the facility	NQAS certification of CHCs and PHCs	NQAS certification of DH, taluk, and, non-taluk hospitals	Entry level NABH certification of medical colleges	Provide support in NQAS certification		
DLI #3	Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control	Implement STEPS surveys Development and adoption of NCD strategy	Provide NCD services in facilities; scale-up CHWCs; implement performance-based incentive (PBI) mechanism	Provide NCD services in facilities		Provide policy and implementation support to directorates to deliver NCD services; support TNHSP in developing NCD strategy	Promotion of healthy lifestyles	Promotion of healthy lifestyles
DLI #4	Improved provision of quality trauma care services	Monitoring and oversight Support development of trauma registry and protocols for IFTs		Make improvements to provide 24x7 trauma care services in identified trauma centers		Provide implementation support to DMRHS and DME to provide trauma care services		
DLI #5	Increased utilization of reproductive and child health services in priority districts	Implement household RCH survey in nine priority districts; identify barriers to uptake, collaborate with DPH and DMRHS to address constraints, and lead the	Provide services; implement SBCC strategy	Provide services, scale-up maternity stay wards; implement SBCC		Support DPH and DMRHS in service provision in priority districts		



DLI		Responsibilities of Directorates and Societies						
		TNHSP Society	DPH	DMRHS	DME	NHM Society	DIMH	TNFSDA
		development of SBCC strategy		strategy				
DLI #6	Strengthened content, quality, accessibility, and use of data for decision-making	Coordinate and collaborate with the NHM Society to develop a conceptual model and operational plan to strengthen HMIS and integrate with electronic medical records including patient tracking for NCDs	Train human resources for health, install, and use strengthened HMIS, EMR and track NCD patients			Collaborate with TNHSP Society to take lead in strengthening HMIS		
DLI #7	Strengthened coordination, integration, performance-based management, learning, and other cross-cutting functions for better results							
	Development and adoption of TN Health Policy/ Vision 2030, operational research program, updated policy for CME, Environment Strategy for TN health sector	Coordinate and contribute to policy/strategy formulation	Contribute to policy/strategy formulation					
	Development and adoption of performance-based incentive (PBI) strategy for PHCs	Collaborate with DPH and NHM Society to develop PBI mechanism	Roll out, implement, and monitor PBI mechanism			Collaborate with TNHSP and DPH to develop PBI mechanism	Promotion of healthy lifestyles	
	Deployment of e-procurement system in TNMSC	Support TNMSC in developing and deploying e-procurement system						
DLI #8	Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)	Develop mechanism for district and health assembly; coordinate with district and state officials; engage NGOs as required to organize them	Participate in the assembly and address recommendations emerging after each assembly					

44. **Two high-level committees will be established to guide the Program no later than three months after effectiveness.** An Empowered Committee (EC) will be headed by the Chief Secretary of Tamil Nadu and will consist of members from the DoF, Department of Planning and Development, and DoHFW. The EC will meet twice a year to take crucial administrative and financial decisions for the Program. A Program Steering Committee (PSC) will also be established to provide government oversight for the Program. The PSC will be chaired by the Principal Secretary, DoHFW, and include representatives from the DoF and DoHFW. It will meet at least every quarter to monitor progress and address implementation bottlenecks. The PMU will play the role of secretariat to support both the EC and PSC.



B. Results Monitoring and Evaluation

45. Every government fiscal year, the TNHSRP PMU will submit two semiannual Program reports on implementation of activities, Program expenditures, bottlenecks, and progress toward results as outlined in the Program Results Framework (annex 2). The TNHSRP PMU will also report on DLI achievements with supporting evidence, which then will be verified by the IVA using the agreed verification protocols. In addition, the PMU will commission necessary surveys and assessments for the relevant DLIs, PDO indicators, and intermediate results indicators.

46. **Tamil Nadu has been an HMIS pioneer and is generating a wealth of data.** However, it has been noted that data are neither streamlined nor easy to utilize, making effective use of data for decision making a key challenge. Under the Program, efforts will be undertaken to improve data generation and increase its use for decision making. National and international expertise to strengthen capacity to analyze and utilize data based on best practices will be employed. Furthermore, the technology and platforms being used by the state to manage the HMIS will be revamped in line with the latest technology and will be fit-for-purpose.

C. Disbursement Arrangements

47. **The key guiding principles for the disbursement of DLIs are as follows:**

- (a) The GoTN will finance the Program using its own budget through the identified budget lines of the Program Expenditure Framework.
- (b) The TNHSRP PMU will prepare technical reports to document the achievement of DLIs. The technical reports will be verified by an IVA, using agreed verification protocols. The IVA will be hired by the TNHSRP PMU according to terms of reference agreed with the World Bank.
- (c) The achievement of time-bound DLIs must happen in the year outlined in the DLI matrix. For non-time-bound DLIs, disbursement can be made whenever the results are achieved during the Program period. For non-scalable DLIs, the World Bank will disburse the DLI value only upon full achievement of the DLI targets. For scalable DLIs, the World Bank will disburse against the formulas as set out in the DLI matrix. Annex 2 indicates which DLIs are scaleable.
- (d) The TNHSRP PMU will submit the disbursement claim and supporting documents (including the IVA verification report) to the Controller of Aid, Accounts, and Audit (CAAA) in the GoI. The CAAA will then submit the disbursement claim and supporting documents to the World Bank. The World Bank will reserve the right for further due diligence on the robustness of data (including random spot check) as needed. It will then issue an official letter to the GoTN endorsing the achievement of the DLI targets and value of disbursement.
- (e) The funds will be disbursed by the World Bank to the GoI under IBRD loan terms. The GoI will release funds to the GoTN as per agreed financing norms between the center and the state.
- (f) In the last year of the Program, the TNHSRP PMU, in coordination with the World Bank, will reconcile the audited Program expenditure (incurred under identified budget lines) with the total disbursement by the World Bank. Any shortfall in the Program expenditure in relation to the DLI disbursement will be adjusted by the World Bank from the final DLI claim.

D. Capacity Building

48. **Capacity building is an integral part of the Program and is supported directly through DLIs #1, #6, and #7.** The directorates and societies are headed by capable officials and staffed by qualified personnel. However, they are currently functioning in silos, which is hindering coordinated planning and



implementation. The Program will strengthen the institutional framework to foster a system of comprehensive planning and monitoring under the DoHFW, encompassing all the directorates and societies. Additionally, as the Program emphasizes scaling up interventions in the areas of quality, NCD management, and equity, it will include a comprehensive capacity-building plan for different levels. At the facility level, health providers will receive training in these areas to both deliver services and manage operations. At the district level, technical and management capacity of district health officials and staff will be strengthened to enable them to better supervise and support facilities at the frontlines. At the national level, the TNHSRP PMU will be strengthened with the relevant technical skill sets to enable facilitation and monitoring of activities. Necessary skill sets include quality of care; NCDs, trauma, and injuries management; data analytics, monitoring, and evaluation; community engagement; FM; procurement; biomedical waste management (BMW); and social safeguards. Other DOHFW directorates and societies will also receive capacity building as needed.

49. **With the introduction of various innovative approaches, the Program will benefit from peer learning.** Such innovations include, for example, quality dashboards, civic forums to boost citizen voice and agency, electronic health records, and PBI mechanisms. Recognizing that PBI mechanisms can be complex, especially those that involve financing based on performance, the Program will be reasonable in its ambition and limit the five-year engagement to the development of the mechanism for piloting. Learning from other states in India and other countries, which have implementation experience with such interventions, will greatly benefit Tamil Nadu. The Program therefore will actively promote peer learning as part of the capacity-building agenda.

50. **With a strong focus on results and disbursements linked to results, the Program represents a departure from ‘business as usual’.** As such, a paradigm shift will be required to operate in this new operating model, and support will be required to ensure implementation of interventions to achieve the agreed results. The World Bank will organize a series of workshops and training sessions on the PforR modality to build capacity of the GoTN officials to deliver under this new arrangement.

IV. ASSESSMENT SUMMARY

A. Technical (including Program economic evaluation)

Program’s Strategic Relevance and Technical Soundness of the Approach

51. **Tamil Nadu has made substantial progress in improving access to health services and the focus is now rightly on improving the quality of care.** As highlighted in the Lancet Global Health Commission on High Quality Health Systems in the SDG Era, poor quality of care is now a bigger barrier to reducing mortality than insufficient access.²⁰ To address the gaps in quality, the Program focuses on a set of results and interventions related to (a) development and adoption of policies, strategies, and guidelines; (b) accreditation of facilities; (c) introduction of quality dashboards; (d) strengthening of content and access to HMIS; (e) development of a PBI mechanism for piloting; and (f) improvement of social accountability and citizen empowerment through annual district and state health assemblies. These interventions are aligned with best global practices. For example, most high-income countries use accreditation to guarantee quality of care and improve patient safety, and accreditation has been shown to result in other quality-improving interventions at the facility level.²¹ Monitoring and publicizing hospital quality data has

²⁰ Kruk, M. E., A. D. Gage, C. Arsenault, K. Jordan, H. H. Leslie, S. Roder-DeWan, and M. English. 2018. “High-Quality Health Systems in the Sustainable Development Goals Era: Time for a Revolution.” *The Lancet Global Health*.

²¹ Desveaux, L., J. I. Mitchell, J. Shaw, and N. M. Ivers. 2017. “Understanding the Impact of Accreditation on Quality in Healthcare:



been found to stimulate hospitals to improve their performance through quality improvement activities.²² In addition, making data publicly available is an important way of increasing accountability. Through the establishment of state and district health assemblies, the Program also aims to achieve vertical integration of accountability by providing a platform for citizens to engage in health policy.

52. **To sustain economic growth, Tamil Nadu requires a healthy adult population.** The growing burden of NCDs, mental health, and injuries, however, presents challenges. The Program aims to address the high and growing burden of NCDs, mental health, and injuries by focusing on cost-effective interventions related to (a) health promotion and NCD prevention, (b) passive screening of NCDs among eligible population, (c) treatment and follow-up, and (d) improvement of monitoring and evaluation related to NCDs. Screening is essential for early detection of NCDs. Cervical cancer screening, for example, can significantly reduce mortality by early detection and treatment and has been identified as a highly cost-effective intervention in India.²³ Screening of hypertension and treatment with antihypertensive drugs is considered a ‘best buy’ for NCD prevention and control. Screening, however, needs to be supplemented with follow-up care and access to treatment for those who are diagnosed with NCDs. To track this, the Program will monitor the share of individuals with hypertension and diabetes who have the disease under control. Training will be developed and delivered to ensure that providers are equipped with the necessary knowledge to address the changing burden of disease in the state.

53. **Despite overall improvements in RCH, an unfinished agenda remains with respect to quality and distribution of care.** To address inequities, the Program will focus on improving access to and quality of health services in the lagging districts and those with relatively higher shares of tribal populations. The six priority districts based on poor performance on RCH indicators are Ariyalur, Ramanathapuram, Theni, Thoothukkudi, Tirunelveli, and Virudhunagar. Three indicators have been chosen to assess progress in this domain: full immunization of children under age 2, full ANC, and modern contraceptive prevalence rate. The three additional districts with relatively large ST populations are Dharmapuri, The Nilgris, and Tiruvannamalai. Table 5 presents the priority districts and their RCH outcomes. On the supply side, the Program will improve the provision of RCH services through NQAS accreditation and establishment of maternity stay wards in remote areas. Demand-side interventions will include a tailored SBCC strategy for the priority districts. Additional interventions may be developed after conducting a rapid assessment in the priority districts to identify other constraints in service utilization.

Table 5. Priority Districts for Select RCH Services (%)

	District	Modern Contraceptive Prevalence ^a	Full ANC (%) ^b	Full Immunization (%) ^c
1	Ariyalur	35.8	25.3	60.6
2	Dharmapuri ^d	54.3	34.3	51.6
3	Ramanathapuram	25.7	30.9	59.0

A Grounded Theory Approach.” *International Journal for Quality in Health Care* 29 (7): 941–947.

²² Hibbard, J. H., J. Stockard, and M. Tusler. 2003. “Does Publicizing Hospital Performance Stimulate Quality Improvement Efforts?” *Health Affairs* 22 (2): 84–94.

Lindenauer, P. K., D. Remus, S. Roman, M. B. Rothberg, E. M. Benjamin, A. Ma, and D. W. Bratzler. 2007. “Public Reporting and Pay for Performance in Hospital Quality Improvement.” *New England Journal of Medicine* 356 (5): 486–496.

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): 111–123.

Herrera, C. A., S. Lewin, E. Paulsen, A. Ciapponi, N. Opiyo, T. Pantoja, and C. I. Okwundu. 2017. “Governance Arrangements for Health Systems in Low-Income Countries: An Overview of Systematic Reviews.” The Cochrane Library.

²³ Goldie, S. J., L. Gaffikin, J. D. Goldhaber-Fiebert, A. Gordillo-Tobar, C. Levin, C. Mahé, and T. C. Wright. 2005. “Cost-effectiveness of Cervical-Cancer Screening in Five Developing Countries.” *New England Journal of Medicine* 353 (20): 2158–2168.



	District	Modern Contraceptive Prevalence ^a	Full ANC (%) ^b	Full Immunization (%) ^c
4	The Nilgris ¹	55.8	45.0	78.7
5	Theni	38.5	19.3	56.8
6	Thoothukkudi	29.7	29.0	47.7
7	Tirunelveli	35.3	26.4	49.8
8	Tiruvannamalai ¹	48.5	34.9	62.1
9	Virudhunagar	23.0	13.7	54.5

Source: NFHS-4.

Note: a. Modern methods include male and female sterilization, injectables, intrauterine devices (IUDs)/postpartum intrauterine device (PPIUDs), contraceptive pills, implants, female and male condoms, diaphragm, foam/jelly, the standard days method, the lactational amenorrhoea method, and emergency contraception.

b. For the last live birth in the five years preceding the survey, mother received four or more antenatal checks, received at least one tetanus toxoid injection, and took IFA tablets or syrup for 100 days or more.

c. Vaccinations against tuberculosis, diphtheria, pertussis, tetanus, polio, and measles for children 12–23 months old.

d. Districts with relatively large ST populations.

Governance and Institutional Arrangements

54. **The GoTN has adequate capacity to implement the Program.** The TNHSP Society, established to implement the World Bank-funded project in 2005, will be the coordinator of Program activities and will be responsible for reporting on results. The DoHFW has already sanctioned a Project Planning Team of 24 positions with staff from the TNHSP Society as well as additional staff. This Project Planning Team will transition into the TNHSRP PMU once the PforR operation becomes effective. The Program is designed to reduce the organizational fragmentation in the DoHFW and will promote collaboration between directorates and societies to achieve results. The Program will improve governance of the health sector and strengthen the capacity of the directorates through systematic, cross-cutting reforms (see box 1 for additional details). These include (a) strengthening HMIS; (b) increasing transparency and accountability with the use of data; and (c) strengthening health administration and management at different levels, including improving integration/coordination between different health directorates. Citizen participation will be promoted through the establishment of the state and district health assemblies. In addition, the Program will support operational research, implementation research, and health systems research to inform decision making, generating lessons for Tamil Nadu as well as other states.

Program Expenditure Framework

55. **Tamil Nadu’s health budget for FY18/19 is INR 113.3 billion (US\$1.6 billion²⁴), representing about 5.8 percent of the total GoTN spending for FY18/19 of INR 1,937.4 billion (US\$27.7 billion).** The overall expenditure framework of the government program for FY2019–24 is estimated at US\$8.2 billion. The overall expenditure framework of the Program for FY2019–24 is estimated at US\$5.3 billion, out of which the World Bank financing is US\$287 million, or 5.44 percent of the total Program financing. The Program cost includes costs of the ongoing reforms and operational costs attributable to the operation. The expenditure program is based on directorate-level work plans designed to achieve the DLIs and the overall results. The expenditure proposed for individual activities is commensurate with their scale and complexity and facilitates efficient execution. The Program Expenditure Framework strikes a balance between reform actions, such as capacity building, recurring expenditure, and asset creation. The majority (68 percent) of Program costs are recurrent salary expenditures. Table 6 shows the overall Program

²⁴ Using an exchange rate of INR 70 per U.S. dollar



expenditure composition by entity/department involved and economical classification of expenditures (detailed budget heads).

Table 6. Program Budget Composition by Directorate/Society and Expenditure Categories

Budget Details		Directorates and Societies (US\$, millions)							Amount (US\$, millions)
Detailed Budget Head	Category of Expenditure	DMRHS	DME	DPHPM	TNFSDAD	DIMH	NHM Society	TNHSP Society	Total 1 year (FY18–19)
1	Salaries	138	288	255	10	30	—	0	722
8	Advertising and Publicity	0	0	0	0	0	—	—	1
17	Minor Works	—	—	—	—	—	—	—	—
18	Maintenance	4	5	4	0	0	—	—	13
19	Machinery and Equipment	0	11	0	0	0	—	0	11
24	Materials and Supplies	—	0	16	0	0	—	—	17
33	Payment for Professional and Special Services	10	24	3	0	0	—	0	37
72	Training	0	0	0	0	—	—	—	0
76	Computer and Accessories	0	0	0	0	0	—	0	0
9	Grant in Aid	—	—	—	—	—	160	12	172
	Total 1 year^a (US\$, millions)	152	329	279	11	30	160	12	974
	Total 5 years^b (US\$, millions)	824	1,785	1,514	58	165	865	67	5,278

Note: a. FY18/19 budget.

b. Including the expected increase of US\$410 million over 5 years.

56. Table 7 shows the Program budget by source of financing. Funding predictability is high, and risks to the Program Expenditure Framework arising out of budget constraints are considered moderate because the Program expenditure constitutes a relatively small portion of the overall Tamil Nadu state budget and is well aligned with the government priorities.

Table 7. Program Budget by Source of Financing

Source	Amount (US\$, millions)	% of Total
Government financing ^a	4,990.75	94.56
PforR IBRD financing	287.00	5.44
Other development partners	0.00	0.00
Total Program Costs	5,277.75	100.00

Note: a. Including the expected increase of US\$123 million over 5 years.

57. Overall funding to the health sector in Tamil Nadu has shown an increase from INR 84.7 billion (US\$1.2 billion) for FY15/16 to INR 113.3 billion (US\$1.6 billion) for FY18/19. This is equivalent to an annual increase of over 10 percent on average in nominal terms over the three years considered, while the average annual inflation at the national level for the same time frame was about 5 percent, showing the



GoTN's commitment to ensure significant real increases in health budgets. This is very likely to continue in the years to come.

Results Framework and Monitoring and Evaluation Capacity

58. Specific, measurable, and relevant indicators were agreed with the GoTN to monitor the Program. The technical assessment revealed important gaps and high fragmentation in the existing data systems. Tamil Nadu pioneered the HMIS in India, but the system is now outdated. The HMIS includes a hospital management system (HMS) and a management information system (MIS). The HMS only collects data on outpatient visits, while the MIS compiles aggregate facility-level monthly statistics. The MIS consists of more than 700 forms and 2,000 reports, making reporting and extraction of data cumbersome. Facilities do not have an incentive to report data, and, as a result, the quality of HMIS data is poor, and the level of incomplete reporting is high. In addition, there are several apps collecting data on service provision and utilization that are outside the HMIS. The HMIS is not set up to easily extract the needed data. Data are visible in slices to relevant actors, but all data are not visible to all in the health department. Similarly, the amount of data and information that is accessible by the public is limited to a selection of RCH indicators. A key result of the Program will thus be a strengthened user-friendly HMIS that will enable the state to monitor performance on key outcomes. While the absence of a patient-tracking data system limited the selection of indicators, some gaps will be supplemented by the STEPS survey for NCDs.

Program Economic Evaluation

59. A detailed economic analysis was conducted to estimate the Program's development impact. The overall impact of the Program was estimated using DALYs. The cost-benefits of the project were calculated for a 20-year period (2019–2038) using three scenarios (baseline, low, and high). The health benefits were calculated based on the potential reductions in DALYs related to NCDs and improvements in quality of care. The net present value (NPV) of Program interventions is positive. Under the baseline scenario, the internal rate of return is estimated at 9 percent, ranging from 5 percent to 16 percent under the low and high scenarios, respectively. In addition to the direct health benefits of NCD and quality interventions, the Program is likely to bring additional indirect economic benefits by averting some of the macroeconomic and microeconomic costs of NCDs. Based on the results of the World Health Organization Environmental Policy Integrated Climate (WHO EPIC) model, the total economic cost of NCDs and mental health (based on productivity losses) in India will amount to US\$4.58 trillion (in 2010 US\$) between 2012 and 2030.²⁵ Other studies have estimated the cost to be between 4 percent and 10 percent of GDP.²⁶ In addition to the productivity losses associated with NCDs, chronic diseases can lead to impoverishment due to the high associated health expenses. The results of the cost-benefit analysis are thus conservative and likely underestimate the impact of the Program.

B. Fiduciary

60. **The conclusion of the Integrated Fiduciary Systems Assessment (IFSA) is that the Program's fiduciary systems will provide reasonable assurance that financing proceeds will be used for intended**

²⁵ Bloom, D. E., E. T. Cafiero-Fonseca, M. E. McGovern, K. Prettner, A. Stanciole, J. Weiss, and L. Rosenberg. 2014. "The Macroeconomic Impact of Non-communicable Diseases in China and India: Estimates, Projections, and Comparisons." *The Journal of the Economics of Ageing* 4: 100–111.

²⁶ Thakur, J. S., S. Prinja, C. C. Garg, S. Mendis, and N. Menabde. 2011. "Social and Economic Implications of Noncommunicable Diseases in India." *Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine* 36 (Suppl1): S13.

Mahal, A., A. Karan, and M. Engelgau. 2010. "The Economic Implications of Non-communicable Disease for India." HNP Discussion Paper, World Bank, Washington, DC.



purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. The IFSA followed the World Bank's Policy for PforR and the related directive, identified key fiduciary risks that may affect the Program's development outcomes, and recommended systems improvement and capacity-strengthening mitigation measures that will be implemented during the life of the Program. Based on the IFSA, fiduciary risk of the Program is assessed as 'Moderate'.

61. The Program will be implemented by five directorates and two societies of the DoHFW. According to the existing setup, the health directorates and societies rely on the technical expertise of three procurement agencies to fulfill their procurement needs. These procurement agencies are TNMSC, Electronics Corporation of Tamil Nadu Limited (ELCOT), and Tamil Nadu Public Works Department (TNPWD).

62. **Procurement systems.** Based on the activities identified in the Program scope, the main procurable items are (a) medical equipment and medical/laboratory supplies and consumables; (b) professional services, including consulting services for technical and professional inputs, outsourcing services, communication campaigns, and advertisements; (c) information technology (IT) and enabled services, computers, laptops, and accessories; and (d) minor civil works for repair, renovation, enhancement, and upgrading of existing health facilities. TNMSC will function as the procurement agency for acquisition of medical equipment and supplies. ELCOT will be the procurement agency for purchase of IT-related equipment and services. TNPWD will be the procurement agency for minor civil work activities at existing health facilities. Some small-value and routine office requirements will be directly procured by the implementing agencies.

63. **Under the Program, the GoTN is not expected to procure any large contracts valued at or above the Operational Procurement Review Committee thresholds** (US\$115 million for works, US\$75 million for goods and non-consulting services, and US\$30 million for consultant services). These thresholds are based on the Moderate fiduciary risk rating for the Program. This conclusion is drawn based on analysis of procurement data of the three procurement agencies from the last two years. The Program is not expected to include any large-value contracts based on the inherent definition of the Program boundary. The implementing units and the procurement agencies shall report to the World Bank if any large contracts appear throughout project implementation. In addition, the World Bank team will, throughout Program implementation, analyze and monitor the semiannual and annual Program budget execution reports, the Financial Monitoring Reports, and contract management reports of the three procurement agencies, to identify any large-value contracts.

64. Tamil Nadu is one of the few states in India which have enacted a Tender Act to ensure transparency in its public procurement activities. The health directorates, societies, and procurement agencies are governed by the Tamil Nadu Transparency in Tenders Act 1998 and the Tamil Nadu Transparency in Tenders Rules 2000. The Act and Rules mandate provisions, including on appointment of tender inviting authority and tender accepting authority; publicity; minimum time for submission of tenders; opening of tenders; evaluation and acceptance of tenders; and appeal. The assessment reviewed the Tenders Act and the Rules to ascertain that principles of economy, efficiency, effectiveness, transparency, and accountability are not compromised. Procurement systems of the three procurement agencies were assessed and found to have processes and procedures for effective implementation of the Tenders Act and Rules. Performance of these systems was also assessed based on historical procurement data for the past two years. This helped validate the adherence to the requirements of the Tenders Act and Rules, particularly in areas of delegation of power, publicity, timelines, evaluation, and award.



65. **FM systems.** The GoTN has an established budget preparation process that is guided by Budget Manual 2012. It follows a six-tier budget classification system that allows for expenditure tracking by major head, sub-major head, minor head, sub-head (based on programs), and sub-detailed head (based on economic classification/nature of expenditures). The Treasury systems of the GoTN are robust and well established, and the staff have experience in several World Bank operations. The Treasury has an e-payroll and Treasury bill passing system to process salary bills of government staff and electronic payments to third party/vendors. The accounting and internal controls are governed by the State Financial Rules, Treasury Code, and specific government orders. The existing FM systems will be used by the health directorates, TNHSP Society, and the Public Works Department (PWD) to implement the Program.

66. Other agencies involved in the Program—ELCOT and TNMSC—are governed by the Companies Act 2013, while the NHM Society is governed by the Societies Act. These agencies have an adequate governance structure, computerized accounting system, internal control framework, and FM capacity to account and report on Program expenditures.

67. The Program funds will flow through the budget lines of the health directorates and societies according to existing systems and procedures of the GoTN. The payments will be made by the Treasury upon presentation of bills by the Drawing and Disbursement Officer 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 addition, TNMSC, ELCOT, and NHM Society will draw funds from the Treasury into their bank accounts after administrative cum sanction order (government order) is provided by the DoHFW with the concurrence of the DoF. The payments will be made by these three agencies on delivery of services, and expenditures will be recorded in the existing accounting system, in line with existing internal guidelines and procedures. The utilization certificates will be submitted by these agencies to the directorates upon completion of the activities.

68. The Program funds will be disbursed by the World Bank to the GoTN on satisfactory achievement of DLIs as verified per agreed verification protocols. 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 GoTN in line with agreed financing norms between the Central Government and state government.

69. The World Bank will rely on the existing audit mechanisms of the GoTN: (a) audit certificate of the Comptroller and Auditor General (CAG) on Finance Accounts and Appropriation Accounts that provide spending of the Health Directorate (classified by 'major head', 'sub-major head', 'minor head', and 'sub-head') on the agreed budget lines of the Program boundary and (b) entity audit certificate and financial statements of TNMSC, ELCOT, TNHSP Society, and NHM Society that include expenses incurred by the agencies under the Program. The audit certificate of the CAG on Finance Accounts and Appropriation Accounts will be shared by the TNHSRP PMU by March 31 each year (that is, within 12 months from the end of each fiscal year of April to March), while the audit report of the CAG on State Finances (that provide analytical review and performance of the annual accounts of the state government) will be shared within one month of the audit reports being presented at the State Assembly. The entity audit certificate and financial statements of TNMSC, ELCOT, TNHSP Society, and NHM Society will be shared by the TNHSRP PMU by December 31 each year (that is within 9 months from the end of each fiscal year of April to March). These audit certificates will satisfy the fiduciary requirements of the World Bank.

70. **Governance and accountability systems.** Under the larger governance framework of India, all government departments and agencies are covered under the Right to Information (RTI) Act 2005. The CAG, through its state office, also carries out compliance audits annually, and the audit-related queries



are reported to the State Assembly and Public Accounts Committee for recommendations and actions. TNMSC and ELCOT are governed by the Companies Act 2013. To ensure sound governance, the Companies Act specifies mandatory requirements in management and administration; accounts, audit, and auditors; and inspection, inquiry and investigation.

71. The State Vigilance Commission has jurisdiction and power to undertake an enquiry or cause an enquiry/investigation to be made on any information that a public servant has exercised or refrained from exercising his powers, for improper or corrupt purposes. It also has powers to call for any information from any department or undertaking of the state government or from any public servant on matters within its jurisdiction. Complainants can directly submit a complaint to the Directorate of Vigilance and Anti-Corruption (DVAC), and it is not mandatory for a complainant to reveal his/her identity. As a latest development, on July 9, 2018, the Tamil Nadu State Assembly passed a bill to set up Lokayukta (Office of Ombudsman); this would translate into the Tamil Nadu Lokayukta Act in the near future. By this act, it is expected that the DVAC with all its functions, officers, and staff would merge under the Office of the Lokayukta. Additionally, the Chief Minister's Office of the GoTN has a special online grievance redressal system that is open to the public. Any individual who feels adversely affected by the Program can register a complaint/grievance online and can track the action taken on it. Review meetings are regularly convened by the Chief Minister's office with the nodal officers of each department/district to expedite the action.

72. **Applicability of the Anti-Corruption Guidelines of the World Bank to the operation.** The Program (Program scope is defined in section II.B) will be subject to the World Bank's Governance and Anti-corruption Guidelines, namely the 'Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing'. The World Bank's 'Guidelines on Preventing and Combating Fraud and Corruption in Program for Results Financing', dated February 1, 2012, and revised on July 10, 2015, shall apply to all activities within the Program scope. As there is no distinction between World Bank-financed activities and government-financed activities within the Program, these guidelines shall be applied in an unrestricted manner on all activities within the Program. Requirements under these guidelines include, but are not limited to, (a) borrower's obligation on informing the World Bank about all fraud- and corruption-related allegations and investigations, (b) the World Bank's right to conduct administrative enquiries, and (c) ineligibility of debarred firms for contract awards. It was agreed that the office of the Secretary in the DoHFW will collate information on fraud- and corruption-related allegations/investigations and provide relevant information to the World Bank on a quarterly basis. In the proposed Program, each participating bidder shall submit (as part of the bidding process), a self-declaration that the bidder is not subject to debarment or has not been sanctioned under the World Bank system of debarment and cross-debarment.

C. Environmental and Social

73. **The Environmental and Social Systems Assessment (ESSA) was carried out in line with the World Bank policy and procedure for PforR financing for the identified Program.** This covered the five health directorates and two societies which are most relevant for health service delivery in the state. Health care facilities at all levels and the populations in their catchment areas will be the beneficiaries of Program support. The ESSA identified opportunities for strengthening the existing institutional, operational, and regulatory systems and capacities pertaining to environment and social issues in the health sector in Tamil Nadu. The findings of the ESSA are based on field visits to different health facilities, use of checklists to assess BMWM, the institutional assessment questionnaire (self-scoring), and discussions with a large number of key stakeholders, including officials of the TNHSP Society, NHM Society, DPH, DME, and DMRHS. The ESSA also benefited from the experience of the successful implementation of the previous TNHSP and other ongoing World Bank-financed projects in the state.



74. The Program design also benefited from the extensive consultation done under the previous TNHSP project with tribal communities in establishing the agenda for the tribal health program. The engagement had included consultations with various NGOs working on tribal health issues, tribal communities, and their ‘sangams,’²⁷ field visits to tribal areas, and consultations with various government departments including the Health, Tribal Welfare, and Forest Departments. Further comments, suggestions, and areas that require strengthening were sought during the free and prior-informed consultation with NGOs working on tribal health and members (men and women) of tribal communities during the stakeholder consultation held on October 24, 2018, and the draft ESSA was disclosed by the World Bank on November 21, 2018. The recommendations were then incorporated and integrated into the design of the Program. Based on the ESSA, the environment and social risk of the Program is assessed as Moderate (refer to Section D on risk assessment).

Key Findings of the ESSA

Applicability of the ESSA Core Principles

<p>Core Principle 1: Applicable</p> <p>Summary Findings: Certain interventions under the Program will require mitigation actions and sustainable approaches to better manage the Program’s environmental effects, including the following:</p> <ul style="list-style-type: none"> • Issues related to generation, collection, segregation, storage, transport, management, and disposal of biomedical, solid, and hazardous wastes. This is particularly relevant for facilities in periurban and rural areas. • Reducing the risk of contracting infections within health care facilities. The upkeep, cleanliness, and hygiene of public conveniences in several of the health care facilities is deficient and inadequate resulting in suboptimal infection control.
<p>Core Principle 2: Applicable</p> <p>Summary Findings: Whereas interventions proposed under the Program would not affect natural habitats and physical cultural resources, lack of pollution management infrastructure, particularly to treat and release effluents from large hospitals poses the risk of adversely affecting aquatic habitats.</p>
<p>Core Principle 3: Applicable</p> <p>Summary Findings: Certain interventions under the Program could expose health care providers and beneficiaries to risks associated with exposure to hazardous materials, infections, and radiation, as well as risks related to construction activities, personal safety, and so on. This will require integrating mitigation actions in the operational manuals and standard operating procedures, including the following:</p> <ul style="list-style-type: none"> • Improving occupational health and safety practices at health facilities through infrastructure design, construction management, infection control, and protocols for addressing accidental spills. • Providing protective clothing and personal safety equipment, as required. • Ensuring safe storage, segregation, transport, and disposal of hazardous wastes.
<p>Core Principle 4: Not Applicable</p> <p>Summary Findings: There is no land acquisition and/or resettlement anticipated under the Program, because the Program does not support any major construction and is limited to minor renovation and repairs of health facilities. Screening will be conducted in health facilities where any repair, renovation, and expansion is planned to avoid any adverse social impact.</p>
<p>Core Principle 5: Applicable</p> <p>Summary Findings: The Program further supports the ongoing culturally appropriate tribal health agenda of the state by enhancing the quality of health care across all districts and in addition attempting to bridge inequities in health care provision among the poorer and more backward districts of the state through the Program’s Results Area #1 on quality of care and Results Area #3 on equity.</p>
<p>Core Principle 6: Not Applicable</p> <p>Summary Findings: The state has no conflict-affected or territorial dispute areas. Exclusion of any groups in</p>

²⁷ A ‘sangam’ is a collective of community members in a block/ district.



terms of caste, religion, and/or geography by the Program activities is not expected.

75. **BMWM.** The primary environmental risk of the Program centers on the BMWM generated at the health care facilities in the state. The previous World Bank-funded project built good capacity and made significant advances in BMWM.

- (a) The compliance with the provisions of the main regulatory instruments, the Bio-Medical Waste Management Rules, 2016 (Amendment 2018) is generally adequate. Common treatment facilities (CTFs) are regularly collecting waste for disposal. However, no performance audits for the CTFs have been undertaken. Consumables, such as colored bins and other required items, at the health facility levels are available and optimally used. There is a considerable gap in treating liquid wastes with very few health care facilities having effluent treatment plants. The Program will support development and adoption of an Environment Strategy and strengthen the PMU in the TNHSRP with an environment expert to enhance state systems for managing environmental risks and adverse impacts.
- (b) Apart from inclusion of modules on BMWM in formal medical education, there are inadequate opportunities for continuous training of medical staff. It is difficult to assess the level to which personal safety standards, especially when working with infectious diseases, chance needle pricks, and so on, are being adhered to. The continuous training on BMW and other environmental aspects should be extended to cover health care services provided by the voluntary sector.

76. **An integrated Environment Strategy is required for managing the projected increase in wastes, including BMW, from health care facilities.** Given that the projected load of BMW is likely to more than double in the next six to eight years, the state needs to develop an integrated strategy for its management. The strategy should include a road map for expanding the infrastructure to deal with the increased wastes. Apart from BMW, e-waste, hazardous waste, and plastic waste from health care facilities is also likely to increase and require attention for its proper handling and disposal. The health care facilities need to comply with the provisions of the related rules. The development and adoption of this strategy is included in DLI #7.

77. **Assessment of Social Systems.** Overall, the Program has a low likelihood of having adverse social impacts. The Tribal Health Program initiated by the earlier World Bank-supported project has been effectively mainstreamed into the government program and government budgetary process. The DoHFW has further expanded the Tribal Health Program to address key health issues of the tribal population. The existing institutional capacity and legislative framework is adequate to ensure social sustainability and the interest of the marginalized and vulnerable population, including the SC and ST population. There is no land acquisition and/or resettlement anticipated under the Program. The Program does not support any major construction and is limited to minor renovation and repairs; hence, no additional land acquisition is anticipated beyond the existing footprint of the health facilities. The key issues identified are related to inequities across Tamil Nadu and the quality of health care provision in poorer and backward districts, which are addressed through the quality of care and equity activities of the Program. Screening will be conducted in health facilities where any repair, renovation, and expansion is planned to avoid any adverse social impact.

78. **Gender.** Tamil Nadu fares better on gender equality than the national average, as reflected in declining maternal mortality and higher female workforce participation. More women are elected as representatives than the mandated one-third reservation. The GoTN has now set a much higher standard with a 50 percent reservation for women in local body elections. However, a key gender gap identified in



Tamil Nadu with respect to health is the utilization of services for specific diseases that affect only women, such as cervical and breast cancer. These are the most common cancers among women in India, with breast cancer constituting about 19–34 percent²⁸ and cervical cancer constituting approximately 6–29 percent²⁹ of all cancers in women. Screening for cancer is known to reduce mortality by facilitating early detection and treatment. In Tamil Nadu, only 23 percent and 15 percent of women of reproductive age have ever undergone an examination of the cervix and breast, respectively (NFHS-4, 2015–16). These figures are lower compared to other southern states and in sharp contrast to Tamil Nadu's performance on other health indicators. This is largely because of (a) limited awareness about the diseases, (b) limited understanding of the importance of early detection and treatment, and (c) screening effort being limited to opportunistic screening at health facilities when women come in for other reasons rather than population-based screening that targets all women within a defined age group. To address this, the Program prioritizes cervical and breast cancer screening, detection, and treatment. Activities will be undertaken to (a) develop and implement an SBCC strategy to increase awareness at household and community levels about the diseases and importance of early detection and screening; (b) develop the approach to implement population-based screening; (c) increase outreach by health workers; and (c) strengthen capacity of health providers and strengthen lab services for screening, diagnosis, and treatment of priority NCDs, including cervical and breast cancer. This priority is reflected in the PDO indicator of utilization of screening services for cervical and breast cancers.

79. **Equity.** Another area identified includes the status of reproductive health in low-performing districts. While the state average for RCH indicators that is full ANC, prevalence of modern contraceptive methods, and full immunization for children under age 2 perform well, there is an approximate 30-percentage point difference between the top 20 percent and bottom 20 percent of districts on the use of these services. The Program attempts to close this equity gap in priority (low-performing) districts by assigning higher DLI values to accreditation of facilities in priority districts, establishing maternity stay wards in remote and hilly tribal areas, conducting a household survey in priority districts to assess demand-side constraints for RCH service utilization, and tailoring the SBCC strategy to survey findings. These are embedded in Result Area #1 on quality of care and Result Area #3 on equity with two PDO outcome indicators on accreditation of public health facilities and utilization of RCH services in priority districts.

80. **Citizen Engagement.** The Program aims to improve accountability and citizen empowerment through several initiatives aligned with global best practices. The annual district and state health assemblies will improve voice and engagement of citizens through collective action while also raising the visibility of the health concerns and needs of communities. In the first year of the Program, a framework and detailed plan will be developed to convene the district and state health assemblies each year. Subsequently, one district health assembly will be organized annually in each district and one state health assembly will be convened annually. Through these health assemblies, the Program also aims to achieve vertical integration of accountability by providing a platform for citizens to engage in health policy. The Program also supports the development of an online dashboard with public access that reports on several health indicators, including RCH, NCDs, and quality, which will strengthen citizens' trust in the health system. These are both reflected as intermediate result indicators which are also DLIs. This will be further

²⁸ Singh, S., J. P. Shrivastava, and A. Dwivedi. 2015. "Breast Cancer Screening Existence in India: A Nonexisting Reality." *Indian Journal of Medical and Paediatric Oncology: Official Journal of Indian Society of Medical and Paediatric Oncology* 36(4): 207–209.

²⁹ 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 and Paediatric Oncology* 37 (4): 278–285.



strengthened with a more comprehensive SBCC strategy that includes multiple layers of engagement with communities, patients, health providers, and policy makers through various channels and modes of communication. In addition, a patient experience questionnaire will be developed to capture and monitor patient experience at secondary- and tertiary-level facilities. The feedback loops between citizens and providers will be strengthened through the patient experience questionnaire. The feedback loops between providers and the state will be strengthened through the quality dashboard monitoring. The feedback loops between citizens and the state will be strengthened through the district and state health assemblies. Through these various interventions, better accountability will be ensured.

81. **Program Action Plan (PAP).** Based on the IFSA and ESSA, three key actions related to fiduciary systems and two key actions related to environment management have been identified as mitigating measures for the PAP and can be found in annex 4.

D. Risk Assessment

82. **Based on the integrated risk assessment carried out during preparation, the overall risk of the Program is considered Moderate for the following reasons.** Political and governance risk is Moderate due to the upcoming elections in 2019. As elections approach, a code of conduct will be instituted by the GOI where new procurements cannot be initiated, negotiations and signings are put on hold. In addition, uncertainties around changes in government can also result in delays. Macroeconomic risk is Low due to the strength of fiscal policies and current fiscal strength of Tamil Nadu. Tamil Nadu's health program is anchored in its Vision 2023, supported by annual policy notes with relevant strategic focus. However, as many implementation details still need to be developed and sequenced, the risk associated with sector strategies and policies risk is Moderate. Technical design of the Program is sound. The three results areas are complemented by foundational activities and cross-cutting health system strengthening. The Program is built on the successes of Tamil Nadu's health sector and prioritizes evidence-based and cost-effective interventions. However, to push the performance frontier of the sector, many interventions supported by the Program are relatively new and therefore carry certain risks. The risks include both the introduction of the PforR instrument as well as the novel nature of some of the interventions. Thus, the technical design of Program risk is rated Moderate. Tamil Nadu's DoHFW has demonstrated its institutional capacity for implementation and sustainability. Although some technical assistance (TA) might be required, risks related to institutional capacity are Low. Fiduciary risk of the Program is assessed as Moderate, and, with proposed mitigation actions, the Program fiduciary systems shall provide reasonable assurance that the financing proceeds will be used for intended purposes. Environmental and social risks are assessed to be Moderate. Compliance with the provisions of the main regulatory instrument is generally adequate. CTFs are regularly collecting waste for disposal, but performance audits and continuous training of medical staff are lacking. There is no land acquisition and/or resettlement anticipated under the Program. The Program does not support any major construction and is limited to minor renovation and repairs. The Program plans to further strengthen and complement the ongoing Tribal Health Program with quality of care interventions and addressing inequalities in poor-performing and tribal districts. Robust citizen engagement—including through patient experience questionnaires, public reporting of health data, district and state health assemblies, and consultations with communities to inform the SBCC strategy – is included in the Program.

83. In addition, the Program was screened for climate and disaster risks. The following hazards are applicable to the geographic areas covered under the Program: extreme temperature, extreme precipitation and flooding, drought, sea-level rise, and storm surge. The impact of these hazards in the short-to-medium term is assessed as Moderate. The proposed Program interventions are expected to



have a positive impact on the lives of beneficiaries through health system strengthening initiatives—both at health facility level and at community level—these interventions will make the service delivery to the aforementioned hazards and improve the coping capacity of the health system when faced with an extreme event. The State Climate Action Plan also identifies that health facilities will be vulnerable to the impacts of climate change, such as increasing temperatures, flooding, and rising sea level. As a result, it is expected that health service delivery will be compromised. Therefore, it is critical to make these facilities resilient to the risks of disaster and climate change and ensure continuous access to and delivery of health services to the population. Specifically, DLI #2 on accreditation supports hospitals and health facilities to comply with building regulations, receiving certificates and adhering to prescribed standards. In implementing these measures, improvements will be made to ensure that health care infrastructure is climate smart. This means introducing low-carbon technologies and increasing the overall resilience of the health facilities to impacts of disasters and climate change. The Program supports accreditation of nearly 370 hospitals and health centers across the state.

84. In addition, resilience to extreme climatic events will be enhanced through improvements in the health system's preparedness for service delivery, especially following any natural disasters. These measures would strengthen the ability of health care providers and target beneficiaries to adapt to and cope with the effects of climate change. This is a critical intervention in a state where 15 of 32 districts are coastal. According to the State Climate Action Plan, increased frequency in the number of cyclones, flooding, and sea-level rise are the anticipated climate risks, making the coastal districts extremely vulnerable. The increased likelihood of extreme events will affect existing critical infrastructure, leading to more damage of property, health, and life. As a result, these extreme events are expected to generate an overall increase in the number of trauma-related cases. In fact, in one of the major floods in Tamil Nadu in 2015, 421 people died, and thousands were injured and hospitalized. In November 2018, a cyclone had adverse effects in several coastal districts in southern Tamil Nadu, resulting in deaths, injuries, and damage. The Program supports strengthening the provision of quality emergency and trauma care services—which in case of a post-disaster scenario are critical for the beneficiaries to be able to cope with climate change. This will be done through improvements in both pre-hospital care (through more and better equipped ambulances) and in-hospital care (through improvements in IFTs of trauma patients, establishment of a trauma registry, and improvements in provision of health services in trauma centers). These interventions to strengthen the emergency and trauma care system are supported directly through DLI #4 and will improve the ability of health providers and citizens to cope with the anticipated effects of climate-related hazards in the future.

E. Grievance Redressal

85. Communities and individuals who believe that they are adversely affected as a result of a Bank supported PforR operation, as defined by the applicable policy and procedures, may submit complaints to the existing Program grievance redress mechanism or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result 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/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.



ANNEX 1. ADMINISTRATIVE MAP OF THE STATE OF TAMIL NADU





ANNEX 2. RESULTS FRAMEWORK MATRIX

Program Development Objective: To improve quality of care, strengthen the management of NCDs and injuries, and reduce inequities in reproductive and child health services in Tamil Nadu.

These results are at Program Level

Program Development Objective Indicators

Indicator Name	DLI#	Unit of Measurement	Baseline	Cumulative Target Values				
				YR1	YR2	YR3	YR4	YR5
<p>1. Increased number of public facilities with quality certification (primary, secondary, and tertiary care)</p> <p><i>Tertiary = medical colleges</i> <i>Secondary = District, Taluk, and non-Taluk hospitals</i> <i>Primary = PHCs and CHCs</i></p> <p><i>Priority districts: Ariyalur, Dharmapuri, Ramanathapuram, The Nilgris, Theni, Thoothukkudi, Tirunelveli, Tiruvannamalai, Virudhunagar</i></p>	2	Number	<p>(i) Tertiary facilities with entry level NABH certification: 0</p> <p>(ii) Secondary facilities with NQAS certification: 3</p> <p>(iii) Primary facilities with NQAS certification: 4</p>	<p>(i) Tertiary facilities with entry level NABH certification: 0</p> <p>(ii) Secondary facilities with NQAS certification: 34 of which 9 are in the priority districts</p> <p>(iii) Primary facilities with NQAS certification: 11 of which 3 are in the priority districts</p>	<p>(i) Tertiary facilities with entry level NABH certification: 0</p> <p>(ii) Secondary facilities with NQAS certification: 34 of which 9 are in the priority districts</p> <p>(iii) Primary facilities with NQAS certification: 71 of which 13 are in the priority districts</p>	<p>(i) Tertiary facilities with entry level NABH certification: 2</p> <p>(ii) Secondary facilities with NQAS certification: 54 of which 13 are in the priority districts</p> <p>(iii) Primary facilities with NQAS certification: 141 of which 30 are in the priority districts</p>	<p>(i) Tertiary facilities with entry level NABH certification: 5</p> <p>(ii) Secondary facilities with NQAS certification: 54 of which 13 are in the priority districts</p> <p>(iii) Primary facilities with NQAS certification: 221 of which 50 are in the priority districts</p>	<p>(i) Tertiary facilities with entry level NABH certification: 7</p> <p>(ii) Secondary facilities with NQAS certification: 75 of which 15 are in the priority districts</p> <p>(iii) Primary facilities with NQAS certification: 300 of which 60 are in the priority districts</p>



2. Improved scores in quality dashboard for primary, secondary, and tertiary level facilities		%	n.a.– to be established after quality dashboard is established	To be established	To be established	To be established	To be established	To be established
3. Increased screening in public sector facilities for cervical and breast cancers		%	Cervical Cancer: 15.8% Breast Cancer: 19.5%	Cervical Cancer: 18% Breast Cancer: 22%	Cervical Cancer: 21% Breast Cancer: 24%	Cervical Cancer: 24% Breast Cancer: 26%	Cervical Cancer: 27% Breast Cancer: 28%	Cervical Cancer: 30% Breast Cancer: 30%
4. Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control	3	%	n.a. – to be established after STEPS is implemented in 2019		—	n.a. – to be established after STEPS is implemented in 2019	—	Hypertension under control: 3 percentage point increase from baseline Diabetes under control: 6 percentage point increase from baseline
5. Improved provision of quality trauma care services	4	Number %	(i) # of trauma centers using trauma registry: 0 (ii) % of surgical ED admissions: ^a 6.7% (iii) % of IFT calls as a % of total 108	(i) 1 trauma center (ii) % of surgical ED admissions: 6.7% (iii) % of IFT calls: 41.1%	(i) 11 trauma centers (ii) % of surgical ED admissions: 8% (iii) % of IFT calls: 38%	(i) 24 trauma centers (ii) % of surgical ED admissions: 10% (iii) % of IFT calls: 35%	(i) 39 trauma centers (ii) % of surgical ED admissions: 12% (iii) % of IFT calls: 32%	(i) 54 trauma centers (ii) % of surgical ED admissions: 15% (iii) % of IFT calls: 30%



			system calls: 41.1%					
			^a % of surgical emergency department (ED) admissions in Group A and B facilities who received surgery within 6 hours of admission in the same institution					
6. Increased utilization of reproductive and child health services in priority districts	5	%	(i) Full ANC ^a : 28.8%	—	—	(i) Full ANC: 36.3%	—	(i) Full ANC: 41.3%
			(ii) Fully immunized ^b : 57.9%			(ii) Fully immunized: 65.4%		(ii) Fully immunized: 70.4%
			(iii) mCPR ^c : 38.5%			(iii) mCPR: 41.5%		(iii) mCPR: 43.5%
^a Full ANC: Pregnant women receiving at least four ANC visits, at least one TT injection, and taken IFA tablets or syrup for 100 or more days ^b Full immunization: Children 12–23 months receiving vaccinations against tuberculosis, diphtheria, pertussis, tetanus, polio, and measles ^c Modern contraceptive prevalence rate (mCPR). Modern methods include male and female sterilization, injectables, IUDs/PPIUDs, contraceptive pills, implants, female and male condoms, diaphragm, foam/jelly, the standard days method, the lactational amenorrhoea method, and emergency contraception.								
Intermediate Indicators								
Indicator Name	DLI #	Unit of Measurement	Baseline	YR1	YR2	YR3	YR4	YR5
1. Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities	1	Number	(i) Number of primary, secondary, and tertiary level facilities implementing at least 1 endorsed quality improvement initiative from the list	—	(i) Number of facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions	(i) Number of facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions	(i) Number of facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions	(i) Number of facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions



			of evidence-based interventions specified in the QoC Strategy: 0 (ii) Number of primary, secondary, and tertiary facilities reporting on quality dashboard quarterly: 0		specified in the QoC Strategy: <i>Primary: 142 Secondary and tertiary:62</i>	specified in the QoC Strategy: <i>Primary: 284 Secondary and tertiary:124</i> (ii) Number of facilities reporting on quality dashboard quarterly: <i>Primary: 190 Secondary and tertiary: 83</i>	specified in the QoC Strategy: <i>Primary: 427 Secondary and tertiary:186</i> (ii) Number of facilities reporting on quality dashboard quarterly: <i>Primary: 380 Secondary and tertiary: 166</i>	specified in the QoC Strategy: <i>Primary: 570 Secondary and tertiary:248</i> (ii) Number of facilities reporting on quality dashboard quarterly: <i>Primary: 570 Secondary and tertiary: 248</i>
2. Piloting of patient experience questionnaire for secondary & tertiary care facilities	%	0	—	—	5	7	10	
3. Implementation of updated social and behavior change communication (SBCC) strategy	Text	N	N	Y	Y	Y	Y	
4. Increased share of primary and secondary facilities with at least one staff trained on mental health	%	0	—	5	20	30	40	
5. Establishment of	Text	N	N	Y	—	—	—	



suicide hotline								
6. Better equipped ambulance system to improve pre-hospital care—number of ATLS ambulances providing Level 1 care		Number	64	75	100	125	150	164
7. Improved capacity of trauma care providers—number of emergency department providers that received Level 3 (BTLS) and Level 4 training (ATLS)		Number	Level 3: Nurses – 165 Doctors – 100 Level 4: Nurses – 0 Doctors – 0	Level 3: Nurses – 1500 Doctors – 700 Level 4: Nurses – 150 Doctors – 70	Level 3: Nurses – 3000 Doctors – 2000 Level 4: Nurses – 300 Doctors – 200	Level 3: Nurses – 5000 Doctors – 3500 Level 4: Nurses – 500 Doctors – 350	Level 3: Nurses – 7000 Doctors – 5000 Level 4: Nurses – 700 Doctors – 500	Level 3: Nurses – 9000 Doctors – 6000 Level 4: Nurses – 900 Doctors – 600
8. Strengthened content, quality, accessibility, and use of data for decision making	6	Text	(i) Conceptual Model and Operational Plan for a strengthened and integrated HMIS: N	(i) Conceptual Model and Operational Plan for a strengthened HMIS covering all data sources, data users and data channels including integration with electronic medical records and patient tracking for	Detailed data model and detailed design specifications completed: Y	Contract awarded for development of integrated HMIS, and key modules (electronic health record and reporting) piloted in at least 1 primary, 1 secondary, and 1 tertiary facility in a district: Y	Integrated system implemented in all the health facilities of at least one district: Y	Integrated system implemented in all the health facilities in 9 districts: Y



				NCDs: Y				
9. Strengthened coordination, integration, performance-based management, learning, and other cross-cutting functions for better results	7	Text	Policies/Strategies Adopted: N	(i) Development and adoption of TN Health Policy/Strategy for Vision 2030: Y (ii) Development and adoption of an Environment Strategy for the health sector in Tamil Nadu: Y	(i) Operational research program launched with 1 annual call for research proposals issued and selected proposal awarded: Y (ii) Deploying e-procurement system in TNMSC and 20% of value of total contracts of TNMSC under the Program done through e-procurement: Y	(i) 1 annual call for research proposals issued and selected proposal awarded: Y	(i) 1 annual call for research proposals issued and selected proposal awarded	(i) 1 annual call for research proposals issued and selected proposal awarded (ii) Development and adoption of PBI strategy for PHCs: Y
10. Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)	8	Text % Number	Districts conducting health assembly: 0% State health assembly: 0	Districts conducting health assembly: 0% State health assembly: 0	Districts conducting health assembly: 10% State health assembly: 1	Districts conducting health assembly: 20% State health assembly: 1	Districts conducting health assembly: 40% State health assembly: 1	Districts conducting health assembly: 60% State health assembly: 1



Indicator Descriptions

Indicator Name (#)	Description	Frequency	Data Source	Methodology for Data Collection	Responsibility for Data Collection	DLIs	
						Responsibility for Data Verification	Scalability of Disbursement (Yes/No)
PDO Indicator 1 – DLI 2: Increased number of public facilities with quality certification (primary, secondary, and tertiary care facilities)	<p>This indicator measures the number of facilities receiving quality certification during the Program period. Specifically, it monitors the</p> <ul style="list-style-type: none"> • Number of medical colleges (tertiary facilities) with entry level NABH certification; • Number of district headquarters, taluk, and non-taluk Hospitals (secondary facilities) with full NQAS certification; and • Number of CHCs and PHCs (primary facilities) with full NQAS certification. <p>The indicator also monitors the number of facilities of each level receiving quality certification in priority districts. The priority districts are Ariyalur, Dharmapuri, Ramanathapuram, The Nilgris, Theni, Thoothukkudi, Tirunelveli, Tiruvannamalai, and Virudhunagar.</p>	Annually	NABH and NQAS certificates	DME, DMRHS and DPH submit NABH/NQAS certificates to TNHSRP	DME, DMRHS, and DPH	IVA	Yes
PDO Indicator 2: Improved scores in quality dashboard for primary, secondary, and tertiary level facilities	A quality dashboard will be developed for primary-, secondary-, and tertiary-level facilities in Year 1. This indicator will track the improvement on the quality dashboard score of these facilities on an annual basis. The baseline and target scores will be established once the dashboard is developed.	Annually	Quality dashboard	Quality dashboard reports	TNHSRP	IVA	—
PDO Indicator 3: Increased screening in public sector facilities for cervical and breast cancers	<p>% of women age 30+ screened for cervical and breast cancer in public sector facilities</p> <p>Numerator: number of women age 30+ screened for cervical/breast cancers in public sector facilities</p> <p>Denominator: number of women age 30+</p>	Annually	NCD App and Census	NCD App and Census	NHM	IVA	—



Indicator Name (#)	Description	Frequency	Data Source	Methodology for Data Collection	Responsibility for Data Collection	DLIs	
						Responsibility for Data Verification	Scalability of Disbursement (Yes/No)
PDO Indicator 4 – DLI 3: Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control	(i) % of individuals age 30+ with hypertension whose blood pressure is under control (ii) % of individuals age 30+ with diabetes whose blood glucose level is under control Numerators and denominators specified in the DLI verification protocol.	Every two years. STEPS surveys conducted in Year 1, 3, and 5.	STEPS	STEPS	TNHSRP	IVA	Yes
PDO Indicator 5 – DLI 4: Improved provision of quality trauma care services	(i) Number of trauma centers using trauma registry (ii) % of surgical ER admissions in Group A and B facilities* who received surgery within 6 hours in the same institution <i>Numerator and denominator specified in the DLI verification protocol.</i> *Group A surgeries include general, orthopedic, plastic, vascular, and neuro surgeries; Group B surgeries are limited to general and orthopedic. (iii) % of IFT calls as a % of total 108 system calls <i>Numerator and denominator specified in the DLI verification protocol.</i>	Annual	HMIS and 108	HMIS and 108	TNHSRP and DME	IVA	Yes
PDO Indicator 6 – DLI 5: Increased utilization of select reproductive and child health services in priority districts	This indicator monitors the utilization of select RCH services in the 9 priority districts: Ariyalur, Dharmapuri, Ramanathapuram, The Nilgris, Theni, Thoothukkudi, Tirunelveli, Tiruvannamalai, and Virudhunagar. The priority districts were identified based on their performance on RCH indicators and proportion of ST population. Three RCH indicators will be monitored: full immunization, full ANC, and use of modern methods of contraception.	Every two years. Household surveys conducted in Year 2 and 4.	Household survey (based on NFHS)	Household survey (based on NFHS)	TNHSRP	IVA	Yes



Indicator Name (#)	Description	Frequency	Data Source	Methodology for Data Collection	Responsibility for Data Collection	DLIs	
						Responsibility for Data Verification	Scalability of Disbursement (Yes/No)
	Numerators and denominators specified in the DLI verification protocol.						
Intermediate Indicator 1 – DLI 1: Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities	This indicator tracks the implementation of at least one endorsed quality improvement initiative from the list of evidence-based interventions specified in the QoC Strategy and the number of facilities reporting on the quality dashboard quarterly. The indicator monitors each intervention at the primary and secondary/tertiary facilities. The quality dashboard will include indicators to measure quality of care along the three dimensions of quality: structural inputs, clinical processes, and patient outcomes. The GoTN and the World Bank will develop this dashboard jointly. The indicators will vary by level of facility. Following development of the dashboard, primary, secondary, and tertiary facilities will be monitored for quarterly reporting on the quality dashboard. Numerators and denominators specified in the DLI verification protocol.	Annual	DPH, DMRHS, DME, and quality dashboard	Quality improvement initiative and quality dashboard reports	TNHSRP with inputs from DPH, DMRHS, and DME	IVA	Yes
Intermediate Indicator 2: Piloting in secondary and tertiary facilities patient experience questionnaire	A detailed patient experience questionnaire—expanding the concept of the Mera Aspatal survey to measure patient satisfaction—will be developed for patients visiting secondary and tertiary facilities. This indicator will track the percentage of the secondary and tertiary facilities piloting this patient experience questionnaire. Numerator: number of secondary and tertiary facilities piloting the patient experience	Annual	DME and DMRHS	Reports from DME and DMRHS	DME and DMRHS	IVA	—



Indicator Name (#)	Description	Frequency	Data Source	Methodology for Data Collection	Responsibility for Data Collection	DLIs	
						Responsibility for Data Verification	Scalability of Disbursement (Yes/No)
	questionnaire Denominator: total # of secondary and tertiary facilities						
Intermediate Indicator 3: Implementation of updated social and behavior change communication (SBCC) strategy	This indicator tracks progress on the implementation of annual workplans developed as part of a comprehensive SBCC strategy. The SBCC strategy will include messages on NCDs and their risk factors (including mental health), road safety, and RCH in priority districts.	Annual	TNHSRP	Reports of roll-out of SBCC activities	TNHSRP	IVA	—
Intermediate Indicator 4: Increased share of primary and secondary facilities with at least one staff trained on mental health	This indicator measures the percentage of primary and secondary facilities with at least one staff trained on mental health Numerator: number of primary and secondary facilities with at least one staff receiving face-to-face training on mental health Denominator: total number of primary and secondary facilities	Annual	DMRHS and DPH	Training report	DMRHS and DPH	IVA	—
Intermediate Indicator 5: Establishment of suicide hotline	TN has a functional toll-free number (104) for counselling on health issues and grievances related to health services. Under the Program, a hotline linked to the 104 health helpline will be developed for counselling related to suicide contemplation and attempts.	One-time	DPH	Report of hotline established	DPH	IVA-	—
Intermediate Indicator 6: Better equipped ambulance system to improve pre-hospital care - number of ATLS	Number of advanced trauma life support (ATLS) ambulances providing Level 1 care during the year.	Annual	TNHSP and NHM	108 MIS	TNHSP and NHM	IVA	—



Indicator Name (#)	Description	Frequency	Data Source	Methodology for Data Collection	Responsibility for Data Collection	DLIs	
						Responsibility for Data Verification	Scalability of Disbursement (Yes/No)
Level 1 ambulances							
Intermediate Indicator 7: Improved capacity of trauma care providers - number of emergency department providers that received Level 3 (BTLS) and Level 4 training (ATLS)	This indicator measures the number of emergency department providers that received Level 3 (basic trauma life support [BTLS]) and Level 4 training (ATLS) during the year.	Annual	DME and DMRHS	Training report	DME and DMRHS	IVA	—
Intermediate Indicator 8 – DLI 6: Strengthened content, quality, accessibility, and use of data for decision making	A Conceptual Model and Operational Plan for a strengthened HMIS covering all data sources, data users, and data channels including integration with electronic medical records and patient tracking for NCDs will be developed in Year 1. In Year 2, a detailed model and detailed design specifications will be completed based on the Conceptual Model and Operational Plan. In Year 3, a contract will be awarded for development of integrated HMIS, and key modules (electronic health record and reporting) will be piloted in at least 1 primary, 1 secondary, and 1 tertiary facility in a district. In Year 4, the indicator will monitor the implementation of an integrated system in all the health facilities of at least one district (as determined by a GoTN order). In Year 5, the integrated system will be implemented in all health facilities of up to an additional 8 districts.	Annual	DPH, DMRHS, DME, NHM, and TNHSRP	GoTN orders, HMIS Conceptual Model and Operational Plan, HMIS	TNHSRP with inputs from DPH, DMRHS, and DME	IVA	Yes



<p>Intermediate Indicator 9 – DLI 7: Strengthened coordination, integration, performance-based management, learning, and other cross-cutting functions for better results</p>	<p>This indicator tracks development and adoption of the following policies, strategies, and activities</p> <p>Year 1:</p> <ul style="list-style-type: none"> • TN Health Policy/Strategy for Vision 2030 • Development and adoption of an Environment Strategy for the health sector in Tamil Nadu <p>Year 2:</p> <ul style="list-style-type: none"> • Launch of the operational research program with 1 annual call for research proposals issued and selected proposal awarded. • Deploying e-procurement system in TNMSC and 20% of value of total contracts of TNMSC under the Program done through e-procurement <p>Year 5: Development and adoption of PBI strategy for PHCs</p> <p>Year 3–5: One annual call for research proposals issues and selected proposals awarded.</p>	<p>One-time/annual</p>	<p>Publication of policies, strategies, and call for proposals, including through government orders.</p>	<p>Report by TNHSRP</p>	<p>TNHSRP</p>	<p>IVA</p>	<p>No</p>
<p>Intermediate Indicator 10 - DLI 8 Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)</p>	<p>Year 2 onward, the indicator will monitor the share of districts conducting health assemblies/forums and whether an annual state health assembly was convened. District health assemblies are expected to occur before the state health assembly. Numerator and denominator specified in the DLI verification protocol.</p>	<p>Annual</p>	<p>TNHSRP</p>	<p>Report on health assemblies</p>	<p>TNHSRP</p>	<p>IVA</p>	<p>No</p>



ANNEX 3. Disbursement-Linked Indicators, Disbursement Arrangements, and Verification Protocols

Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
Results Area #1: Improved Quality of Care (US\$81.9 million)								
1. <i>Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities</i>			Ad hoc implementation of quality improvement initiatives by hospitals	(i) QoC Strategy developed and adopted (ii) Quality dashboard for health facilities developed and launched and government order issued detailing the quality improvement initiatives endorsed	At least 1 health facility implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions specified in the QoC Strategy*	At least 1 health facility reporting on quality dashboard during each quarter of the reporting year	At least 1 health facility reporting on quality dashboard during each quarter of the reporting year	At least 1 health facility reporting on quality dashboard during each quarter of the reporting year
Allocated Amounts (US\$)	43,732,000	15%		(i) US\$4,000,000 (ii) US\$7,000,000	US\$20,000 for each primary care facility and US\$30,000 for each secondary and tertiary care facility up to US\$18,840,000	US\$14,800 for each additional primary care facility and US\$22,000 for each additional secondary and tertiary care facility from	US\$14,800 for each additional primary care facility and US\$22,000 for each additional secondary and tertiary care facility from	US\$14,800 for each additional primary care facility and US\$22,000 for each additional secondary and tertiary care facility from



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
						the previous year up to a total amount of US\$13,892,000 for Years 3 to 5	the previous year up to a total amount of US\$13,892,000 for Years 3 to 5	the previous year up to a total amount of US\$13,892 for Years 3 to 5
2. <i>Increased number of public facilities with quality certification (primary, secondary, and tertiary care facilities)</i> [Prior Result]			(i) Tertiary: 0 (ii) Secondary: 3 (iii) Primary: 4 <i>Tertiary</i> = medical colleges <i>Secondary</i> = district, taluk, and non-taluk hospitals <i>Primary</i> = PHCs and CHCs	(i) Gap analysis completed and agreed facility quality improvement plans for NABH/NQAS certification approved (ii) At least 1 facility certified* [Prior Result]	At least 1 facility certified*			
Allocated Amounts (US\$)	38,200,000	13%		(i) US\$7,125,000 (ii) US\$160,000 for every secondary care facility certified (up to 34)	(i) US\$850,000 for every tertiary care facility certified (up to 7 such facilities) (ii) US\$160,000 for every additional secondary care facility certified (up to 75 cumulative), with an additional US\$75,000 for each of the first 6 (that is, up to 15 cumulative) that are in the priority districts (iii) US\$37,000 for every additional primary care facility certified (up to 300 cumulative), with an additional US\$15,000 for each of the first 57 (that is, up to 60 cumulative) that are in the priority districts			



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
				such facilities), with an additional US\$75,000 for each of the first 9 that are in the priority districts (iii) US\$37,000 for every primary care facility certified (up to 11 such facilities), with an additional US\$15,000 for each of the first 3 that are in the priority districts				
Results Area #2: Enhanced Management of NCDs and Injuries (US\$66.6 million)								
3. <i>Increased share of adults with hypertension</i>			Baseline to be established after STEPS is	(i) STEPS survey implemented with	(i) The percentage point increase in the share of hypertensive adults whose blood pressure is under control over the previous survey (with statistical significance)* (ii) The percentage point increase in the share of diabetic adults whose			



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)					
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)	
<i>or diabetes whose blood pressure or blood sugar are under control</i>			implemented in 2019	survey factsheet produced (ii) TN NCD Strategy developed and adopted	blood glucose is under control over the previous survey (with statistical significance)*				
Allocated Amounts (US\$)	48,885,500	17%		(i) US\$4,985,500 (ii) US\$4,000,000	(i) US\$7.3 million for every percentage point increase in the share of hypertensive adults whose blood pressure is under control over the previous survey (with statistical significance) up to US\$22 million (ii) US\$3 million for every percentage point increase in the share of diabetic adults whose blood sugar is under control over the previous survey (with statistical significance) up to US\$18m				
4. Improved provision of quality trauma care services			(i) # of trauma centers using trauma registry: 0 (ii) % of surgical emergency department admissions in Group A and B facilities who received surgery within 6	(i) Trauma registry established and is in use in at least 1 trauma center (ii) Protocols for requesting IFTs developed and existing IFTs in relation to	(i) Increase in the number of trauma centers where the trauma registry is in use* (ii) Percentage point increase in surgical emergency department admissions in Group A and B facilities who received surgery within 6 hours of admission* (iii) Percentage point decrease in IFT calls as a percent of total 108 system calls*				



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
			hours of admission in the same institution: 6.7% (iii) % of IFT calls as a % of total 108 system calls: 41.1%	these protocols analyzed by hospital				
Allocated Amounts (US\$)	17,715,000	6%		(i) US\$1,000,000 (ii) US\$1,000,000	(i) US\$35,000 for each additional trauma center from the previous year operating a trauma registry (up to US\$1,855,000) (ii) US\$600,000 for every percentage point increase (up to US\$4,980,000) (iii) US\$800,000 for every percentage point decrease (up to US\$8,880,000)			
Results Area #3: Reduced Equity Gaps in Reproductive and Child Health (US\$56.5 million)								
5. Increased utilization of reproductive and child health services in priority districts			(i) Women receiving full ANC: ^a 28.8% (ii) Children 12–23 months fully immunized: ^b 57.9% (iii) Modern contraceptive on prev. rate: 38.5%	(i) Percentage point increase in women receiving full ANC compared to the previous survey (with statistical significance)* (ii) Percentage point increase in full immunization of children 12–23 months compared to the previous survey (with statistical significance)* (iii) Percentage point increase in modern contraceptive prevalence rate compared to the previous survey (with statistical significance)* ^a Full ANC means at least four ANC visits, at least one tetanus toxoid injection, and having taken IFA tablets or syrup for 100 or more days. ^b Full immunization means vaccinations against tuberculosis, diphtheria, pertussis, tetanus, polio, and measles.				
Allocated Amounts (US\$)	56,500,000	20%		(i) US\$1,600,000 for every percentage point increase from baseline up to US\$20 million. (ii) US\$1,600,000 for every percentage point increase from baseline up to US\$20 million.				



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
(iii) US\$3,300,000 for every percentage point increase from baseline up to US\$16.5 million.								
Cross-cutting Initiatives to Strengthen Institutional and State Capacity (US\$81.25 million)								
6. <i>Strengthened content, quality, accessibility, and use of data for decision making</i>			HMIS in place but fragmented across data streams/databases	Detailed Conceptual Model and Operational Plan developed for a strengthened HMIS covering all data sources, data users and data channels including integration with electronic medical records and patient tracking for NCDs	Detailed data model and detailed design specifications for integrated HMIS completed*	Contract awarded for development of integrated HMIS, and key modules (electronic health record and reporting) piloted in at least 1 primary care facility, 1 secondary care facility, and 1 tertiary care facility in one district*	Integrated HMIS implemented in all the health facilities of at least one district*	Integrated HMIS implemented in all the health facilities in at least 1 additional district of Tamil Nadu*
Allocated Amounts (US\$)	36,500,000	13%		US\$6,000,000	US\$6,500,000	US\$8,000,000	US\$8,000,000	US\$1,000,000 per district up to a maximum of US\$8,000,000
7. <i>Strengthened coordination, integration, performance</i>			n.a.	(i) TN Health Policy/Strategy for Vision 2030	(i) Operational research program launched with annual call for	Annual call for research proposals issued and selected proposal awarded*		



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)				
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)
<i>-based management, learning, and other cross-cutting functions for better results</i>				developed and adopted (ii) Operational research program developed and adopted (iii) Updated policy for CME program developed and adopted (iv) PBI strategy for PHCs developed and adopted* (v) Development and adoption of an Environment Strategy for the health sector in Tamil Nadu*	research proposals issued and selected proposal awarded (ii) e-procurement system deployed in TNMSC and 20% of value of total contracts of TNMSC under the Program done through e-procurement			
Allocated Amounts (US\$)	30,750,000	11%		(i) US\$4,000,000 (ii) US\$1,750,000	(vi) US\$3,000,000 (vii) US\$3,000,000	US\$3,000,000 for each year that call for proposals is issued and proposal awarded		



Disbursement-Linked Indicators (DLIs)	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Disbursement-Linked Results (DLRs)					
				Results to be Achieved in FY2019/20 (Year 1)	Results to be Achieved in FY2020/21 (Year 2)	Results to be Achieved in FY2021/22 (Year 3)	Results to be Achieved in FY2022/23 (Year 4)	Results to be Achieved in FY2023/24 (Year 5)	
				00 (iii) US\$3,000,000 (iv) US\$5,000,000 (v) US\$2,000,000					
8. <i>Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)</i>			No	Guidelines on district and state health assemblies developed and adopted	(i) At least 10% of all districts conducted health assembly during the year (ii) Tamil Nadu conducted state health assembly during the year	(i) At least 20% of all districts conducted health assembly during the year (ii) Tamil Nadu conducted state health assembly during the year	(i) At least 40% of all districts conducted health assembly during the year (ii) Tamil Nadu conducted state health assembly during the year	(i) At least 60% of all districts conducted health assembly during the year (ii) Tamil Nadu conducted state health assembly during the year	
Allocated Amounts (US\$)	14,000,000	5%		US\$4,000,000	(i) US\$1,000,000 (ii) US\$250,000	(i) US\$2,000,000 (ii) US\$250,000	(i) US\$3,000,000 (ii) US\$250,000	(i) US\$3,000,000 (ii) US\$250,000	

Notes: The payments in the DLI matrix above sum to the total loan amount minus the 0.25% front-end-fee (US\$717,500) which will be capitalized.

*These DLRs are not time-bound. The fiscal years in which they are expected to be achieved according to this annex are strictly for indicative purposes. These DLRs can accordingly be met and until the closing date.



Verification Protocol Table: Disbursement-Linked Indicators

Disbursement-Linked Indicators	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. <i>Implementation of quality improvement interventions in primary, secondary, and tertiary care facilities</i>	Year 1: Quality dashboard developed for primary-, secondary-, and tertiary-level facilities; QoC Strategy developed and adopted; and government order issued detailing quality improvement initiatives endorsed. Year 2-5: Number of primary, secondary, and tertiary facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions specified in the QoC Strategy. Number of primary and secondary/tertiary facilities implementing at least 1 endorsed quality improvement initiative from the list of evidence-based interventions specified in the QoC Strategy. Year 3 to Year 5: Number of primary, secondary, and tertiary facilities reporting quarterly on quality dashboard.	Yes	DPH, DMRHS, DME, and quality dashboard	IVA	Year 1: Manuals of quality indicator dashboards for primary, secondary, and tertiary level facilities submitted to the IVA. Government order for QoC Strategy and government order detailing quality improvement initiatives. Year 2–5: IVA annually visits a random subset of facilities to check activities and records of quality improvement initiatives. Year 3 to Year 5: IVA annually visits a random subset of facilities on the list to check the dashboard data versus primary data source (quality registries, medical records) for the timeliness and completeness of dashboard.
2. <i>Increased number of public facilities with</i>	Year 1: Gap analysis and approval by DoHFW of agreed facility	Yes	Year 1: Gap analysis and facility	IVA	Year 1: Gap analysis and facility improvement



<p><i>quality certification (primary, secondary and tertiary)</i></p>	<p>quality improvement plans for NABH/NQAS certification Year 2 to Year 5: Number of facilities receiving quality accreditation/certification:</p> <ul style="list-style-type: none"> • Number of medical colleges (tertiary facilities) with entry level NABH accreditation and number of which are located in priority districts; • Number of District Head Quarter, Taluk and non-Taluk Hospitals (secondary facilities) with full NQAS certification and number of which are located in priority districts; • Number of CHCs and PHCs (primary facilities) with full NQAS certification and number of which are located in priority districts. <p><i>Priority districts:</i> Ariyalur, Dharmapuri, Ramanathapuram, The Nilgris, Theni, Thoothukkudi, Tirunelveli, Tiruvannamalai, and Virudhunagar.</p>		<p>improvement plans for NABH/NQAS accreditation Year 2 to Year 5: NABH/NQAS certificates</p>		<p>plans for NABH/NQAS accreditation submitted to the IVA. Year 2 to Year 5: Copies of NABH/NQAS certificates submitted to the IVA.</p>
<p>3. <i>Increased share of adults with hypertension or diabetes whose blood pressure or blood sugar are under control</i></p>	<p>Year 1, 3, and 5: STEPS survey with biomarkers conducted to measure % of individuals with hypertension or diabetes whose blood pressure or blood sugar are under control (i) Hypertension:</p>	<p>Yes</p>	<p>STEPS Survey</p>	<p>IVA</p>	<p>STEPS survey with biomarkers conducted by an independent survey firm or by DoHFW. IVA will provide oversight for the survey and verify the analysis. To qualify for payment, the differences between</p>



	<p><i>Numerator:</i> Number of individuals diagnosed with hypertension with systolic blood pressure ≤ 140</p> <p><i>Denominator:</i> Number of individuals diagnosed with hypertension</p> <p>(ii) Diabetes</p> <p><i>Numerator:</i> Number of individuals diagnosed with diabetes with blood glucose level ≤ 7 mmol/L</p> <p><i>Denominator:</i> Number of individuals diagnosed with diabetes</p>				<p>baseline and subsequent surveys should be statistically significant*. *This means a result is unlikely due to chance. A conventional (and arbitrary) threshold for statistical significance is a p-value of less than 0.05, but the the p-value will be established after the baseline survey is conducted.</p>
4. <i>Improved provision of quality trauma care services</i>	<p>Year 1:</p> <p>(i) Establishment of trauma registry and its use in 1 trauma center</p> <p>(ii) Development of protocols for requesting IFTs and hospital analysis of existing IFT in relation to these protocols</p> <p>Year 2–5:</p> <p>(i) Number of trauma centers using trauma registry</p> <p>(ii) % of surgical ER admissions in Group A and B facilities* who received surgery within 6 hours of admission in the same institution</p> <p><i>Group A surgeries include general, orthopedic, plastic, vascular, and neuro surgeries; Group B surgeries are limited to general and orthopedic</i></p>	Yes	DME, TNHSRP	IVA	<p>IVA to</p> <p>(a) Verify that the trauma registry has been developed (Year 1) and has been implemented and is operating in the specified number of facilities</p> <p>(b) Verify that protocols for requesting IFT have been developed and a hospital analysis in relation to the protocols has been conducted</p> <p>(c) Verify the percent of surgery cases admitted through the emergency department where the surgery was performed within 6 hours;</p> <p>(d) verify the percent of total 108 calls that are</p>



	<p><i>Numerator:</i> Number of surgical ER admissions in Group A and B facilities who received surgery in the same institution within 6 hours of admission</p> <p><i>Denominator:</i> Number of surgical ER admissions in Group A and B facilities</p> <p>(iii) % of IFT calls as a % of total 108 system calls</p> <p><i>Numerator:</i> Number of IFT calls</p> <p><i>Denominator:</i> Number of 108 ambulance calls</p>				IFTs, using data from the 108 system
5. <i>Increased utilization of reproductive and child health services in priority districts</i>	<p>Household survey conducted in Years 2 and 4 to measure utilization in the 9 priority districts (Ariyalur, Dharmapuri, Ramanathapuram, The Nilgris, Theni, Thoothukkudi, Tirunelveli, Tiruvannamalai, and Virudhunagar) of the following services:</p> <p>Full Immunization</p> <p><i>Numerator:</i> Number of children 12–23 who received vaccinations against tuberculosis, diphtheria, pertussis, tetanus, polio, and measles</p> <p><i>Denominator:</i> Number of children 12–23 months</p> <p>Full ANC</p> <p><i>Numerator:</i> Number of women with a live birth in the five years preceding the survey who received at least four ANC visits, at least one TT injection, and</p>	Yes	Household survey in the priority districts	IVA	<p>Household survey (based on the NFHS) conducted by an independent survey firm. IVA will provide oversight for the survey.</p> <p>To qualify for payment, the differences between baseline and subsequent surveys should be statistically significant*.</p> <p>*This means a result is unlikely because of chance. A conventional (and arbitrary) threshold for statistical significance is a p-value of less than 0.05, but the the p-value will be established after the</p>



	<p>taken IFA tablets or syrup for 100 or more days.</p> <p><i>Denominator:</i> Number of women with a live birth in the five years preceding the survey</p> <p>Modern contraceptive prevalence rate</p> <p><i>Numerator:</i> Number of women ages 25–49 currently using any modern method of contraception</p> <p><i>Denominator:</i> Number of women ages 25–49</p> <p>Modern methods include male and female sterilization, injectables, IUDs/PPIUDs, contraceptive pills, implants, female and male condoms, diaphragm, foam/jelly, the standard days method, the lactational amenorrhoea method, and emergency contraception. All indicators calculated as the difference between estimated value and baseline.</p>				baseline data is analyzed.
6. <i>Strengthened content, quality, accessibility and use of data for decision making</i>	<p>Year 1: Conceptual Model and Operational Plan for a strengthened HMIS covering all data sources, data users and data channels including integration with electronic medical records and patient tracking for NCDs developed</p> <p>In Year 2, a detailed model and detailed design specifications will be completed based on the</p>	Yes	DPH, DMRHS, DME, NHM, and TNHSRP	IVA	Final document, proofs of adoption (government order), and copy of contract submitted to the IVA. In Year 3, IVA will visit all facilities piloting the integrated system. In Years 4 and 5, IVA will visit a random subset of facilities on the list to check the



	<p>Conceptual Model and Operational Plan.</p> <p>In Year 3, a contract will be awarded for development of integrated HMIS, and key modules (electronic health record and reporting) will be piloted in at least 1 primary, 1 secondary, and 1 tertiary facility in a pilot district.</p> <p>In Year 4, the indicator will monitor the implementation of an integrated system in all the health facilities of at least one pilot district (as determined by a GoTN order).</p> <p>In Year 5, the integrated system will be implemented in all the health facilities of up to an additional 8 districts of Tamil Nadu.</p>				implementation of the integrated system.
<p>7. <i>Strengthened coordination, integration, performance-based management, learning, and other cross-cutting functions for better results</i></p>	<p>Development and adoption of:</p> <ul style="list-style-type: none"> • TN Health Policy/Strategy for Vision 2030 • Development and adoption of operational research program • Adoption of updated policy for CME program • Development and adoption of PBI strategy for PHCs • Development and adoption of an Environment Strategy for the health sector in Tamil Nadu • Deploying e-procurement system in TNMSC and 20% of value of total contracts of 	No	DoHFW	IVA	<p>Final documents and proofs of formal adoption (government order) submitted to the IVA for TN Health Policy/Strategy for Vision 2013, operational research program, updated CME program, PBI mechanism, and Environment Strategy for the health sector. Proofs of annual call-for-proposal submitted to IVA.</p> <p>For deployment of e-</p>



	TNMSC under the Program done through e-procurement Year 2 to Year 5: Annual calls for research proposals issued and selected proposal awarded				procurement in TNMSC, DoHFW will declare based on feedback from TNMSC, which will be verified by IVA. For 20% value of total procurement, TNMSC will compile the total annual procurement data with component through e-procurement and submit the statement to DoHFW, which in turn will submit to IVA. IVA will visit TNMSC and check the factual correctness on a sample basis.
8. <i>Increased transparency and accountability through citizen engagement (voice, agency, and social accountability)</i>	Year 1: Guidelines on the state and district health assemblies developed and adopted. Year 2 to Year 5: (i) % of districts conducting health assembly during the year <i>Numerator:</i> Number of districts conducting Health Assembly/Forum during the year <i>Denominator:</i> Number of districts in Tamil Nadu (ii) Annual state assembly conducted	No	TNHSRP	IVA	GoTN order with the guidelines submitted to the IVA in Year 1. Copies of annual district and annual state assemblies report (or resolutions) submitted to the IVA in Years 2–5.

**ANNEX 4. PROGRAM ACTION PLAN**

Action Description	DLI#	Responsibility	Recurrent	Frequency	Due Date	Completion Measurement
Increase bidder participation: (i) establish procurement complaint redressal system and (ii) organize annual supplier forum/conferences		TNMSC, ELCOT, PWD	Yes	Continuous		(i) procurement complaint redressal system established and (ii) annual supplier forum/conferences organized
Strengthen FM capacity in NHM: (i) assessment to identify gaps in staffing and policies; (ii) training programs for accounting staff; (iii) greater use of expenditure module of public financial management system (PFMS); and (iv) strengthen concurrent audit system		NHM Society	Yes	Continuous		(i) gap assessment report, (ii) training programs organized, (iii) PFMS usage report, and (iv) concurrent audit report
Enhance transparency: (i) publicly disclose contract awards of value greater than INR 20 million (approximately US\$285,720) and (ii) collate information on fraud and corruption-related complaints and provide information to the World Bank on a quarterly basis		TNMSC, ELCOT, and PWD Office of the Secretary, DOHFW	Yes	Continuous		(i) report on disclosure by the procurement agencies and (ii) quarterly report on fraud and corruption-related complaints
BMWM: performance audits for the CTFs have to be undertaken		TNHSRP PMU	Yes	Yearly		Annual performance audit conducted and reports publicly disclosed by the competent authority
Introduce continuous refresher trainings on biomedical and other waste management		TNHSRP PMU and DME	Yes	Continuous		New refresher training course rolled out for health care staff across all health care facilities

**ANNEX 5. IMPLEMENTATION SUPPORT PLAN**

The success of the Program will depend on a detailed implementation plan supported by a framework for implementation. This framework/plan for the TNHSRP is based on (a) needs assessment for TA; (b) development of an operational plan to achieve results; (c) development of a system of open and regular communication between different stakeholders to maximize coordination; (d) learning from implementation through knowledge exchanges and operational research; (e) regular and systematic review missions, technical consultations, and monitoring. The World Bank will ensure that timely support is provided to the TNHSRP to ensure that implementation progress is not hindered, and results are achieved. The World Bank will leverage its relationships and convening power to mobilize national and international expertise and the support of relevant development partners, to provide technical support.

Time	Focus	Skills Needed	Resource Estimate
First twelve months	<ul style="list-style-type: none"> Assessments, studies, and planning Fiduciary monitoring capacity Systems to monitor safeguards Systems for reporting on Results Framework and DLIs Institutional arrangements 	Technical; fiduciary; institutional; env & social	<ul style="list-style-type: none"> Experts in quality of care, emergency and trauma care systems, NCDs, mental health, and HMIS Operations officer Fiduciary specialists Environment and social safeguards specialists
12-48 months	<ul style="list-style-type: none"> Monitoring, review, and TA Monitoring of fiduciary and safeguards areas Institutional arrangements 	Technical; fiduciary; institutional; environment and social	<ul style="list-style-type: none"> Experts in quality, trauma care, NCDs, mental health, and HMIS Operations officer Fiduciary specialists Environment and social safeguards specialists

Skills Needed	Number of Staff Weeks	Number of Trips
Senior health specialist (Task Team Leader)	12	5
Quality of care and service delivery Expert	4	3
Trauma care experts	4	3
HMIS expert	4	3
Technical consultants	12	As required
Operations specialist	12	5
Procurement specialist	3	2
FM specialist	3	2
Environment specialist	2	2
Social specialist	2	2