



MANAGING TRANSITION

Reaching the Vulnerable while Pursuing Universal Health Coverage





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Health Coverage

*HEALTH FINANCING SYSTEM ASSESSMENT
IN LAO PDR*

December 2017

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Acknowledgments

This report was prepared by the World Bank's Lao PDR health team led by Emiko Masaki with contributions by Birte Holm Sørensen, Somil Nagpal, Banthida Komphasouk, Sophavanh Thitsy, Michael Obst and Mayuly Chamleunsab. The field data collection was carried out by Thiphaphone Panyanpuvong, Khamhou Nanthalad and Thalalin Vongsonephet. The team is grateful for the overall technical guidance from the Health Financing Global Solution Group of the World Bank for conducting the health financing system assessment at country level, specifically Ajay Tandon, Eko Setyo Pambudi and Jewelwayne Salcedo Cain for their advice on data analysis, and Sarah Alkenbrack for her valuable inputs to the immunization section of the report.

The team appreciates the valuable comments and guidance from the following peer reviewers: Emeline Cammack (Department of Foreign Affairs and Trade, Australia), Pandu Harimurti (Senior Health Specialist, World Bank), Lauren Elisabeth Franzel-Sassanpour (Immunization Cluster Lead, WHO Lao PDR), Keomanivone Phimmahasay (Economist, World Bank), Evgenij Najdov (Senior Economist, World Bank) and Netsanet Workie (Senior Health Economist, World Bank). The report also gained from close interactions with Gavi mission teams to Lao PDR over the last one year, wherein early findings of this assessment were presented and discussed.

The team also received valuable feedback on preliminary findings through a consultative workshop with representatives of the Government of Lao PDR, including copartners from the Ministry of Health and Ministry of Labor and Social Welfare. The team would like to specially thank Government counterparts who have contributed toward this report: Dr. Funkham Rattanavong (Deputy Director General, Department of Planning and International Cooperation), Dr. Souphab Panyakeo (Deputy Director General, Department of Finance); Dr. Bounthavong Phengsisomboun (Deputy Director General, Department of Training and Research), Dr. Mytry Senchanthixay (Deputy Director, National Health Insurance Bureau), Dr. Chansay Pathammavong (Deputy Director, National Program for Immunization); and Ministry of Labor and Social Welfare: Ms. Bouahome Phommachane (Deputy Director General, National Social Security Fund).

The team thanks Chris Stewart and Usha Tankha for editing and Bouaplaphan Phouthavisouk for overall administrative support for preparation and production of the report.

The team would like to acknowledge that this work is funded by the Australian Government's Department of Foreign Affairs and Trade (DFAT), and Gavi, The Vaccine Alliance. The team also appreciates the overall guidance from Jean-Christophe Carret, Sally Burningham, and Toomas Palu.

Abbreviations and Acronyms

ADB	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
BCG	Bacillus Calmette–Guérin Vaccine
BoD	Burden of Disease
CBHI	Community-based Health Insurance
CDC	Centers for Disease Control
CM	Community Midwife
cMYPT	Comprehensive Multiyear Planning Tool
DAH	Development Assistance for Health
DALY	Disability-adjusted Life Year
DEA	Data Envelopment Analysis
DFO	District Finance Office
DHIB	District Health Insurance Bureau
DHIS 2	District Health Information System version 2
DHO	District Health Office
DHS	Demographic and Health Survey
DLIs	Disbursement Linked Indicators
DTP(1/2/3)	Diphtheria, Tetanus and Pertussis Vaccine (1st, 2nd, 3rd dose)
EPI	Expanded Program on Immunization
EVM	Effective Vaccine Management
FMNCH	Free Maternal, Neonatal and Child Health (program)
FY	Fiscal Year
GARP	Global AIDS Response Progress
Gavi	Global Alliance for Vaccines and Immunization (now Gavi, The Vaccine Alliance)
GDP	Gross Domestic Product
GGE	General Government Expenditure
GGHE	General Government Health Expenditure
GNI	Gross National Income
GoL	Government of Lao PDR
HEF	Health Equity Fund
HepB	Hepatitis B Vaccine
HepB-0	Hepatitis B Vaccine (birth dose)
HGNP	Health Governance and Nutrition Development Project
Hib	Haemophilus Influenzae type B
HIV	Human Immunodeficiency Virus
HNP	Health and Nutrition Project

HPDS	Health Personnel Development Strategy 2010-20
HPIS	Health Personnel Information System
HPV	Human Papilloma Virus
HRH	Human Resources for Health
HSS	Health System Strengthening
ICS	Integrated Communications Strategy
IDA	International Development Association
IEC	Information, Education and Communication
IHME	Institute for Health Metrics and Evaluation
IMF	International Monetary Fund
IPV	Inactivated Polio Vaccine
JE	Japanese Encephalitis Vaccine
JICA	Japan International Cooperation Agency
KOFIH	Korea Foundation for International Healthcare
KOICA	Korea International Cooperation Agency
LAK	Lao Kip
LECS	Lao Expenditure and Consumption Survey
LSIS	Lao Social Indicator Survey
LuxDev	Luxembourg Agency for Development Cooperation
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MCHC	Maternal and Child Health Center
MDGs	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Rate
MoF	Ministry of Finance
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoLSW	Ministry of Labour and Social Welfare
MoPI	Ministry of Planning and Investment
MR	Measles Rubella Vaccine
NCDs	Noncommunicable Diseases
NGOs	Nongovernmental Organizations
NHA	National Health Accounts
NHI	National Health Insurance
NHIB	National Health Insurance Bureau
NIP	National Immunization Program
NSC	National Statistical Center
NSEDP	National Socioeconomic Development Plan
NVS	New and Underused Vaccines
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket
OPV(1/2/3)	Oral Polio Vaccine (1st, 2nd, 3rd dose)
PATH	Program for Appropriate Technology in Health
PCV(1/2/3)	Pneumococcal Conjugate Vaccine (1st, 2nd, 3rd dose)

Penta(1/2/3)	Pentavalent Vaccine (1st, 2nd, 3rd dose)
PFO	Provincial Finance Office
PHIB	Provincial Health Insurance Bureau
PHO	Provincial Health Office
PNC	Postnatal Care
PO	Purchase order
PvtHE	Private Expenditure on Health
RDF	Revolving Drug Fund
SASS	State Authority for Social Security
SDGs	Sustainable Development Goals
SHI	Social Health Insurance
SIAAs	Supplemental Immunization Activities
SSO	Social Security Organization
TB	Tuberculosis
Td	Tetanus and Diphtheria Toxoids
THE	Total Health Expenditure
TT/TT2	Tetanus Toxoid Vaccine
UHC	Universal Health Coverage
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
USB	Universal Serial Bus
VHW	Village Health Worker
VPDs	Vaccine-Preventable Diseases
WDI	World Development Indicators
WEO	World Economic Outlook
WHO	World Health Organization

Executive Summary

As Lao PDR prepares to graduate from Least Developed Country (LDC) status by 2020 to become an upper-middle-income country by 2030, it also expects to face declining funding from external sources and the need to increase domestic financing for health. This report aims to provide a snapshot of the current health financing system of Lao PDR and to identify critical constraints and opportunities facing the health care system as the country undergoes transitions in demographics, epidemiology and health financing. In addition to reviewing the overall health financing system, the report includes an in-depth analysis of key bottlenecks and sustainability challenges for immunization services as a marker for implementation constraints in the face of rapidly reducing external financing.

Lao PDR in Transition

Demographic and Epidemiological Transition

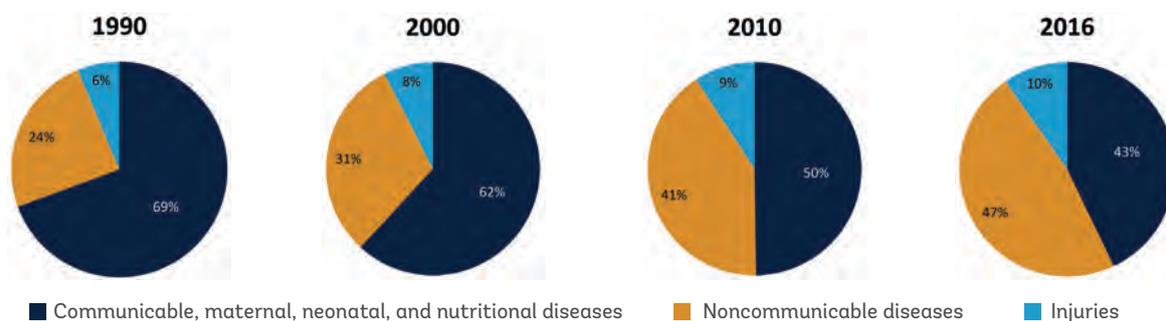
According to the latest Census, the population of Lao PDR was estimated at around 6.5 million in 2015 with an expected peak at 9.3 million around 2060. The population growth rate was 1.7 percent in 2015. The total fertility rate has steadily declined from 6.4 births per woman in 1984 to 3.0 in 2014 and is expected to decline further in coming years. The country still has a predominantly young population, with the median age at 23.5 years in 2015; however the country's demographic composition is expected to change by 2050. Roughly one-third of the population was under 15 years in 2015; this is projected to decrease to around 20.1 percent by 2050. Only around 4 percent of the population is older than 65 years but the share is projected to reach 11 percent by 2050.

Despite improvements in national averages, there are persistent and high disparities in health outcomes across socioeconomic groups, by ethnicity, provinces, and educational level of mothers, and not all population groups are benefitting from these improvements. Infant and under-five mortality rates as well as stunting of children under five years are four to five times higher in the provinces with the highest rates compared to the province with the lowest rate. Residents of rural areas without access to roads are particularly disadvantaged and depend to a large degree on outreach services for both preventive and basic curative care.

As in several other countries in the region, the health system in Lao PDR is facing an epidemiological transition, from the burden of disease (BoD) being dominated by communicable diseases to a pattern in which noncommunicable diseases (NCDs) have taken a leading role (Figure 1). In 1990, 69 percent of BoD was caused by communicable diseases, maternal and neonatal disorders, and nutritional deficiencies, and only 24 percent by NCDs. In the following years the share of NCDs in BoD increased steadily while the share of communicable diseases diminished, and by 2016 the proportion of NCDs (47 percent) had

surpassed that of communicable diseases (43 percent).

Figure 1: BoD by Cause (Share of DALYs Lost) (1990–2016)



Source: Institute for Health Metrics and Evaluation database (IHME) 2017b.

Note: DALYs: Disability-adjusted Life Years. DALYs refer to aggregated healthy years of time lost at the population level as a result of disease-related morbidity and premature mortality.

Undernutrition remains a significant challenge. In 2011, more than one-quarter of children aged under five years (26.6 percent) in Lao PDR were underweight and more than 44 percent were stunted.¹ About one-third of the deaths of children under five years are attributed to child malnutrition. The total economic loss due to child malnutrition was estimated to be at least US\$200 million annually, representing 2.4 percent of the country’s GDP in 2013.

To address unfinished MDG agenda and new and emerging challenges, the National Health Insurance Bureau (NHIB) is currently finalizing an essential service package which is based on the maternal and child health (MCH) service package to be financed from domestically financed health insurance. In addition, provisions must be made for inclusion of NCDs and the required measures to ensure that the rate of undernutrition is reduced and eventually eliminated.

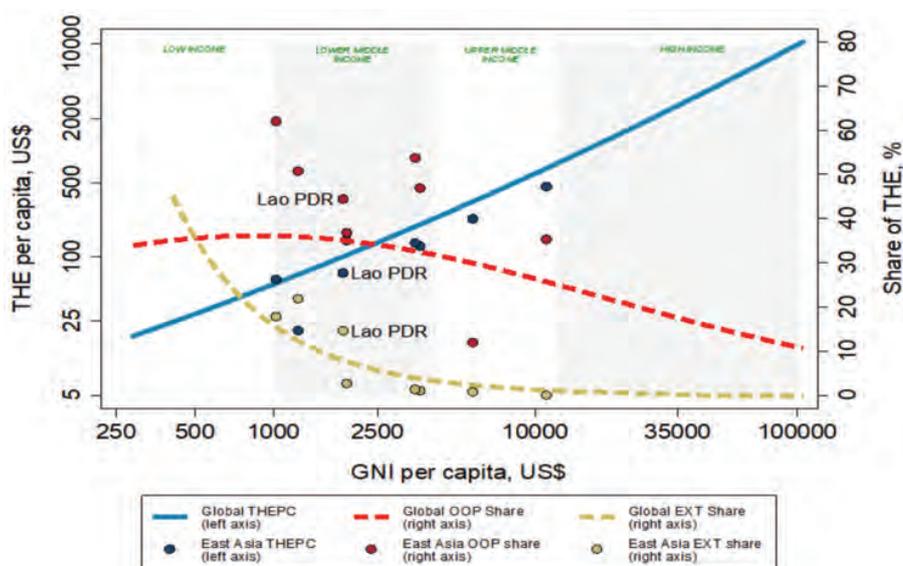
¹ The estimate of 44 percent is from Lao Social Indicator Survey (LSIS) 2011-12. The next LSIS is being carried out in 2017 with results expected in 2018. Since the LSIS 2011-12, stunting has been measured by a number of different instruments which all show that stunting declined since 2011-12. The Lao PDR Child Anthropometry Assessment Survey 2015 (a tag-on to the National Immunization Coverage Survey) indicates the stunting rate among children under five years may have declined by as much as 9 percentage points (to 35 percent in 2015). However, different surveys present different estimates of stunting, and most observers are awaiting the results from LSIS 2017 to confirm the magnitude of the decline.

Health Financing Transition

Sustained economic growth is often accompanied by significant changes in health financing systems in many countries. In parallel to the demographic, epidemiological, and nutrition-related transitions faced by countries as they grow and develop, countries face what some have called a “health financing transition” or an increase in the level of total health expenditures (THE) accompanied by a rise in the domestically-financed prepaid or pooled share of THE. This trend is driven by a range of factors including changes in population priorities, institutional development, medical technology, demographic or epidemiological shifts, as well as changes in the financing and management of health care. In addition to the broader health financing transition, there is also an important subtransition that occurs as countries move from low-income to lower- and upper- middle-income status, that is, the transition from externally financed health programs. These are programs that are financed by bilateral and multilateral agencies as well as from development partners such as Gavi (Global Alliance for Vaccines and Immunization, now known as Gavi, The Vaccine Alliance) and Global Fund (GF).

Lao PDR’s health system is clearly following this path and is undergoing a health financing transition. Even though some indicators fluctuate widely, there is some evidence of an appropriate, albeit slow, health financing transition that is taking place in Lao PDR. There has been a consistent increase in health expenditure per capita, a decrease in out-of-pocket (OOP) expenditure on health as a share of THE, and a rising share of financing from pooled sources. As the country’s economy is projected to grow rapidly and external financing is reduced, this transition is expected to figure more prominently in coming years (Figure 2).

Figure 2: Health Financing Transition in Lao PDR



Source: World Bank 2017; WHO 2017a.

Note: Data for Lao PDR is based on the NHA FY2012-2013 to 2015-2016 report.

(i) Both x and y axes in log scale. (ii) THEPC = THE per capita; EXT= External.

Lao PDR has entered the accelerated transition phase (as defined by Gavi)² and has begun the process of phasing out from Gavi support, as their GNI per capita on average over the previous three years increased beyond the eligibility threshold. A plan has been prepared for moving towards full domestic financing of the immunization program. It is highly likely that both the United Nations Children’s Fund (UNICEF) and the World Health Organization (WHO) will also substantially reduce their technical assistance to the immunization program as an important part of their support is financed by Gavi. The Gavi transition is among the earliest ones being witnessed by the country, but will also help generate lessons for similar transitions that may affect programs funded by other development partners in due course.

Current Status

Macroeconomic Context

During the period 2005-15 Lao PDR had one of the fastest growing economies in the world—with an average GDP growth rate of 7.8 percent per annum and GDP per capita growth rate of 6.1 percent per annum. Growth has been boosted by the resource sector and by accommodative macroeconomic policies on both the fiscal and monetary fronts. Natural resources—including mining, hydropower and forestry (accounting for 44 percent of total wealth in 2014)—have been key drivers of growth in recent years. During the 2000s, growth was driven by mining; but a decline in prices, lower grade reserves, and sector regulation issues have more recently lowered its contribution to growth. More recently, the power sector has been driving growth as significant investments were attracted to tap the country’s abundant hydro potential, largely to serve demand in the region.

By 2011 the country had reached the status of a lower-middle-income country. GNI per capita and GDP per capita have continued to increase and reached US\$2,353 and US\$2,150 respectively in 2016. Strong economic growth has been accompanied by a significant decline in poverty rates. The national poverty rate declined from 33.5 percent in 2002 to 23.2 percent in 2012. In 2012 about 47 percent of the population lived on less than US\$3.10 a day and about 15 percent on under US\$1.90 a day. Sharing the benefit of growth could, however, be improved. Despite the decline in extreme poverty defined as less than US\$1.90 a day, the increasing poverty of some of the non Lao-Tai ethnic groups and rising income inequality are increasing concerns that growth should be shared more equitably.

While government expenditures generally followed increasing revenues until 2012, the expenditure-revenue gap has begun to widen since then and there are indications that this further deteriorated in fiscal year 2015-16 due to a shortfall of revenues. The shortfall is largely attributed to lower commodity prices as well as lower grants from development assistance. Grants declined from 5.4 percent of GDP in 2014-15 to 2.3 percent in 2015-16. As a result, total revenues as a ratio of GDP are estimated to have declined to 19 percent in fiscal year 2015-16 from 23 percent of GDP in fiscal 2015 and the fiscal deficit widened to above 6 percent of GDP.

² Countries enter the accelerated transition phase if their average GNI per capita over the previous three years increases beyond the eligibility threshold. The accelerated transition phase is characterized by gradually increasing co-financing requirements over a period of five years to achieve full domestic financing thereafter.

Outstanding public debt was estimated at 68 percent of GDP in 2016 (up from 62.5 percent in 2013) and is projected to reach 70 percent of GDP in 2018, which is relatively high compared to regional neighbors such as Cambodia and Myanmar as well as above the average for countries at Lao PDR's level of development. As a consequence, the 2016 Joint IMF-World Bank Debt Sustainability Analysis (DSA) has elevated the risk of debt distress in Lao PDR from moderate to high. The fiscal balance is expected to gradually consolidate over the medium term resulting in stabilizing public debt levels. Still, a high public debt level, public sector arrears, and considerable development needs will keep pressure over public resources.

Inequity

The progress in achieving health outcomes in Lao PDR varies hugely by province. In 2011-12, for example, infant mortality and under-five mortality rates were four to five times higher in the provinces with the highest rates compared to the province with the lowest rates. Rates of stunting of children aged under five years were more than three times higher in the provinces with the highest rates than in the province with the lowest rates. The problem is even more challenging for the residents of remote rural areas without access to roads, that depend to a large degree on outreach services for both preventive and basic curative care.

There are also huge disparities by economic status—with the share of institutional births ranging from 87 percent in the wealthiest quintile to only 11 percent in the poorest quintile. Lao PDR is grappling with the difficult challenge of being one of the world's least equitable countries regarding coverage and outcomes of MCH services between the rich and the poor.

Notably, the ethnic minorities lag behind the Lao-Tai ethnic majority in several dimensions of welfare including health. The poor among ethnic minorities are worse off than the poor among the Lao-Tai, and the better off among ethnic minorities are still poorer than the nonpoor Lao-Tai. High levels of OOP spending deter health service utilization by the poor and reduce the potential redistributive capacity of the health-financing system. Estimates from the Lao Social Indicators Survey of 2012 show that the total fertility rate among the Lao-Tai in 2012 was around 2.6, compared with 4.2 and 5.5 among the Mon-Khmer and Hmong-Mien, respectively. In general, the fertility rate is highest among less educated women, who are much more likely to have been married and got pregnant in their teenage years once they left school.

Service Availability and Readiness

While the overall health worker to population ratio is within WHO minimum standards, the rate of qualified health personnel (doctor, nurse, midwife) is below this benchmark. Compared to the WHO 2006 minimum requirement of 23 physicians, nurses and midwives per 10,000 population, Lao PDR had reached 32 staff per 10,000 population by 2016. Of these, however, only 43 percent have a mid-level education, bringing the professional workforce down to 12.3 professionally trained staff per 10,000 population. A 2014 study

also found substantial gaps in the clinical abilities of the frontline workers related to MDG achievements—indicating that provision of a basic package of services may be less than optimal unless major investments are made in preparation of job descriptions, defining functional responsibilities, preparation of job aids and supportive supervision.

Shortage of qualified manpower is further compounded by an uneven distribution of health workers across provinces. The density of doctors to population in Vientiane is four times that of the rural areas. Similar but less pronounced differences exist for high-level nurses and midwives. A World Bank (2016) workforce study conducted in 2014, however, found maldistribution of staff (by geography, level and type), substantial gaps in clinical knowledge, and a mismatch between the type of in-service training provided and the knowledge needed to perform the service required.

The Health Personnel Development Strategy does include measures to address human resource management. While the 2015 mid-term review found some progress in its implementation, an agreed action plan for implementation of the strategy with reporting mechanism would facilitate achievement of the agreed targets and goals. Since 2014, a large number of newly graduated community midwives have been posted at the frontline health centers, thereby substantially improving the availability of MCH service provision. There remains, however, the huge task of aligning the skills and competencies of staff with the health services where and when they are needed.

According to the findings from the 2014 Service Availability and Readiness Assessment (SARA), the overall general service readiness index for Lao PDR was 59 percent in 2014—meaning that, on average, 59 percent of facilities had the required tracer items and amenities to provide basic health services to the population. Service readiness was generally found to be higher in the Central Region than in the North or South Regions and slightly higher for district hospitals than for health centers.

Health Financing

Health financing in Lao PDR is characterized by low and erratic levels of government spending on health and correspondingly high reliance on OOP health expenditure and external assistance for health. The high levels of OOP spending deter health service utilization by the poor and reduce the potential redistributive capacity of the health financing system. Furthermore, the poor and the near poor are frequently impoverished or pushed deeper into poverty because of high OOP spending on health. At the same time, Lao PDR has substantial dependence on external finance—in particular in priority health programs including TB, Malaria and immunization programs.

Financing for health in Lao PDR comes mainly from four sources: (i) government budgetary sources; (ii) social health insurance (SHI); (iii) OOP payment from households; and (iv) external sources. The composition of health expenditures has changed over the 15-year period until 2014, although OOP spending has remained the largest source. In 2016, nearly one-half of THE (48.2 percent) was financed by private spending. This includes OOP spending by households which is 45.1 percent of THE. Public expenditure on health—which



includes external financing—was 51.8 percent. The contribution from SHI was 4.4 percent of General Government Health Expenditure (GGHE) in 2016.

(i) Government budgetary expenditure

Health's share of the government budget is relatively low. According to the 2014 WHO data, several countries—including neighboring Cambodia and Vietnam—devote a larger share of the budget to health. This indicates that Lao PDR's health spending is on the lower side in global and regional comparisons; however, there has been a significant increase in government budgetary spending on health since its inclusion in the Seventh Socioeconomic Development Plan 2011–15. A modest portion of revenues from the Nam Theun 2 hydro-power project has been allocated to eligible health programs, including the Free Maternal, Neonatal and Child Health (FMNCH) program and the Health Equity Fund (HEF) targeted for the poor. According to Lao PDR's State Budget Plan for fiscal year 2015-16, health's share of the national budget is 6 percent.

In the past, most government health spending in Lao PDR had been allocated towards capital expenditure and wages, leaving little room for critical nonwage recurrent spending in an already tight resource environment. In fiscal year 2007-08, more than 70 percent of the government health expenditure went to wage-related recurrent expenditure. Only 17 percent was available for nonwage recurrent expenditure, including purchasing critical health-related commodities and financing operational plans. There has, however, been a measurable increase in the share of nonwage recurrent expenditures since 2012. In fiscal year 2015-16, the share of nonwage recurrent expenditures increased to 35 percent of the total government health budget.³

(ii) Social health insurance

Social Health Insurance (SHI) expenditures account for a small share of THE in Lao PDR. Various pilots and policy measures to address the challenges of limited access to health services and lack of financial protection for the poor and the vulnerable have been initiated and several social health protection schemes have been introduced over the past decades. In 2016, SHI expenditures, primarily from formal sector schemes, were only 4.4 percent of GGHE. The share of SHI expenditures is expected to increase in coming years as a result of the government's recent decision to launch the NHI scheme in 2016, which integrates these multiple social health protection schemes and will expand its coverage nationwide by 2018. NHI targets the entire informal sector population through the integration of three schemes,

³ The data on government health expenditure in the WHO Global Health Expenditure Database (<http://apps.who.int/nha/database>) is different from the official expenditure data reported in the Government Official Gazettes and Budget Plans in Lao PDR. This is partly due to difference in the Government fiscal year and calendar year and the methodology used. For international comparison and presentation of health expenditure data (from public, private, domestic and external sources), the latest data available from the WHO database is used. Data for 2016 are based on the NHA FY2012-2013 to 2015-2016 report.

namely, the Health Equity Fund (HEF), Community-Based Health Insurance (CBHI), and the FMNCH program. Following its initial operation in three provinces, NHI has rapidly rolled out to 15 provinces in 2017, and is expected to achieve nationwide coverage by 2018.

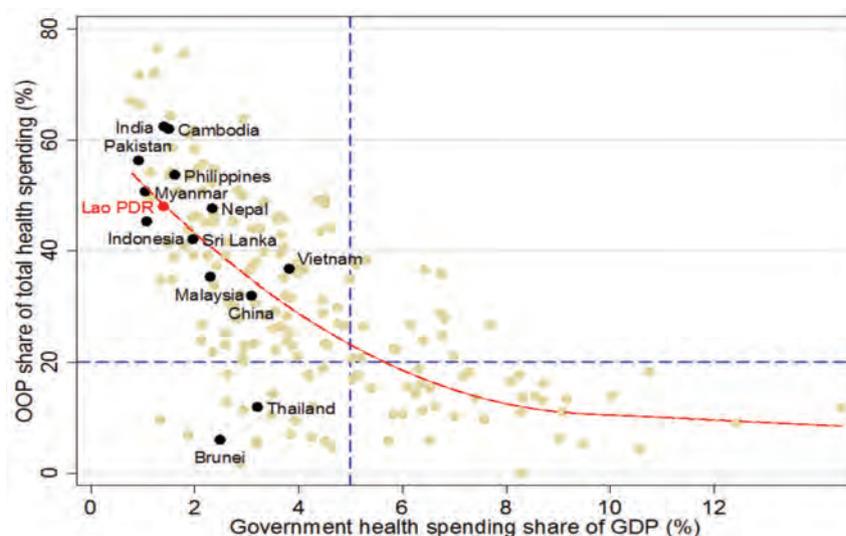
Despite the rapid expansion of social health protection schemes in Lao PDR, while in transition, they remain fragmented and also duplicate administrative infrastructure.

While expansion of NHI is under way, a process of consolidation or integration of the various schemes can create confusion in health facilities and beneficiaries around eligibility and coverage. Mitigating this through better communications will be important as the non-contributory NHI scheme (also with very low copayment for using public health services) expands its coverage and reaches its target of 80 percent population coverage by 2020.

(iii) OOP spending

Despite the significant decline of OOP as a share of THE from more than 60 percent in 2000 to 45 percent in 2016, OOP payments remain the largest source of financing for health in the country (Figure 3). The heavy reliance on OOP spending results in considerable financial barriers to access health services and increases vulnerability of the poor to health shocks.

Figure 3: OOP Share of THE (2014)



Source: World Bank 2017.

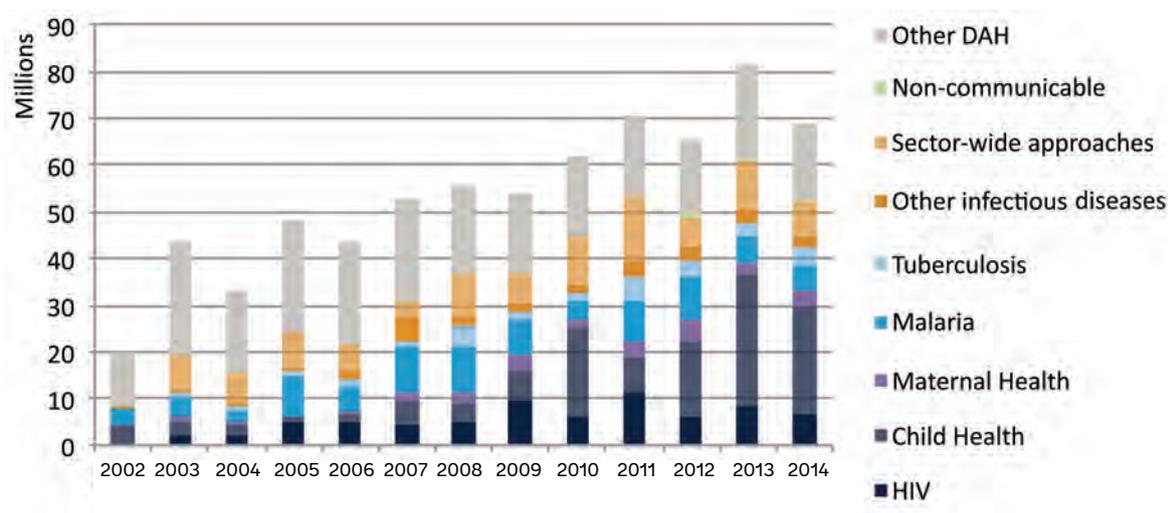
Note: Data for Lao PDR is based on the NHA FY2012-2013 to 2015-2016 report.

(iv) External financing

The level of dependency of health spending from external sources is higher than expected for the income level of the country and higher than in neighboring countries like Cambodia or Vietnam. While the share of externally financed health spending in Lao PDR has been steadily increasing in the first decade of the century, it appears to have leveled off around 18 percent of total health spending in recent years. Externally financed health spending per capita has increased from US\$3.13 in 2000 to US\$10.35 in 2016.

Figure 4 illustrates the general trends in development assistance for health (DAH) by health focus area. A significant share of the increase in DAH in recent years can be attributed to the country's focus on maternal and child health, communicable diseases and immunization. While development assistance earmarked for specific disease programs such as HIV, TB, and Malaria accounts for a large share of the total DAH, MCH accounted for 21 percent of total DAH over the 2002 to 2014 period, increasing to 31 percent since 2010, and peaked in 2014 at 38 percent. General health system strengthening has been another focus area in recent years.

Figure 4: DAH by Health Focus Area (2002–14) (US\$ millions)



Source: IHME 2017a.

Note: In constant 2015 US dollars.

From a health financing perspective, one of the major challenges for Lao PDR is to continue expanding service coverage for key health programs that have been traditionally financed by the donors, and accelerate and sustain the progress toward universal health coverage (UHC). The country has to achieve this feat while effectively managing the transition from external financing and by ensuring sustainable financing for UHC. Integration of externally funded programs into a well-functioning health system, exploring new sources of financing for health, and reducing fragmentation in financing and service delivery is key to ensuring future sustainability and enhancing health outcomes. While several key donors have initiated dialogue around transition, it is critical for the country to develop a clear transition strategy or plan to ensure its smooth transition from externally funded programs to domestically financed, integrated and sustainable health programs.

Key Messages

Lao PDR is undergoing rapid transition in its demography, epidemiology and composition of health financing. While the country has made the attainment of UHC by 2025 an explicit public policy goal, financing UHC in a fiscally sustainable manner will be challenging in the context of these transitions. There are several key areas that the country can consider and prioritize in its path toward attaining UHC.

Increased domestic financing and decreased reliance on OOP spending is key in moving towards UHC. This may be achieved by:

- decreasing reliance on OOP spending through continued increase in government health spending, strengthened and more efficient health systems, and the creation and expansion of social health protection schemes; and
- increased government health spending to reduce the financial burden on households. Much of this will need to come from domestic sources, given the unpredictability and vulnerability associated with the uncertainty of external financing, which is declining.

To ensure sustainability, it is essential to increase efficiency and effectiveness of health spending. This may be achieved by:

- increasing the levels of spending along with an increase in the efficiency and effectiveness of spending to ensure sustainability of financing for health and desirable public health outputs and outcomes;
- improved financial management and expenditure tracking systems at all levels including the health center;
- systematic priority setting to identify where limited resources should be invested. This will involve an evidence-based determination and prioritization of the investments yielding the best returns in terms of health outcomes, improved equity, improved financial protection, sustainability and other important health system objectives;

- innovations devised to cut costs, such as encouraging facility-based services for Zone 1, and integrating outreach for Zones 2 and 3⁴. Mainstreaming of programs also allows multitasking by multiskilled staff, which is difficult to achieve in vertically run programs; and
- responding to the changing burden of disease and addressing the increasing burden and potential economic impact of NCDs while addressing the unfinished agenda to meet the health MDG targets and challenges of undernutrition and stunting.

UHC service package needs to integrate vertical health programs and be costed to ensure sufficient and sustainable financing. This may be achieved by:

- planned integration and mainstreaming of multiple, often parallel, implementation modalities and financing of programs and services that lead to efficiency gains;
- careful determination of the content, processes and modalities, as well as the costing of the essential service package (being considered as the first step towards UHC) to project future financing needs for UHC;
- a costed essential service package for mainstreaming vertical health programs, such as HIV, TB, Malaria and immunization services. Immunization and other key health programs financed and delivered through vertical structures create duplication and inefficiency (for example, in supply chain management, reporting and service delivery); and
- a medium-term expenditure framework for the health sector for assessing the fiscal space for health and ensuring adequate, predictable and sustainable financing for health.

Gradual and functional integration is imperative for successful transition and sustainability. This may be achieved by:

- full integration and mainstreaming of data systems under the unified district health information system (DHIS 2) to reduce unnecessary burdens at the facility level, while concentrating on efforts to improve data quality and end use of this information for monitoring and policymaking;
- integrating or streamlining multiple mechanisms for financing and delivery of health programs and services;
- strengthening the institutional capacity for managing the integrated scheme and steering purchasing functions for improved health system performance;
- leveraging the information systems, monitoring and purchasing capacity in an integrated system to improve the quality of service delivery.

⁴ Zone 2 is 5-10 km from the nearest health center; Zone 3 is more than 10 km from the nearest health center.

Careful design and implementation of the Essential Service Package. This may be achieved by:

- due consideration for a number of issues when designing the package, including the needs of population health and addressing the changing burden of disease;
- including facility-based as well as community-based services, and defining the optimal extent to which facility-based services must be delivered through outreach to population groups who do not seek or have access to services;
- evaluation of all services included therein, based on cost effectiveness, supply-side readiness, fiscal capacity, equity and other criteria relevant to the country context;
- adequate and sustainable funding to cover the services for the poor and other target groups exempt from copayment; and
- ensuring that services are available to the poor and underserved—and that ‘elite capture’ is avoided.



Introduction

Lao PDR is a landlocked country bordering Thailand, Cambodia, Myanmar, Vietnam and Yunnan province of China. The majority of the people, including 49 ethnic groups with diverse culture, language, and traditions, live in the rural and remote mountainous areas, with challenges of communications, transport, and service provision. There are 18 provinces and 148 districts comprising 8,716 villages. The total population of Lao PDR is around 6.5 million with nearly 60 percent of the total population living in rural areas. Over the past decades, Lao PDR has made significant improvement in development indicators. Incomes have risen, poverty rates have declined, access to several health services has improved, and measurable progress has been made in improving health outcomes of the population.

The country has enjoyed robust economic growth supported by the resource sector and continued domestic and foreign direct investment. It is making good progress toward attaining the Eighth National Socioeconomic Development Plan (NSED) outcomes to ensure Lao PDR graduates from United Nations-designated Least Developed Countries (LDC) status by 2020, addressing the unfinished agenda for Millennium Development Goals (MDGs), and delivering early progress on the Sustainable Development Goals (SDGs)–including UHC.

The objective of this assessment is to provide a snapshot of the current health financing system of Lao PDR and to identify a number of critical constraints and opportunities facing the health care system of Lao PDR while it accelerates its progress towards UHC. As the country is preparing to graduate from LDC status by 2020 and become an upper-middle-income country by 2030, Lao PDR also expects to face reduced funding from external sources and the need to increase domestic financing for health. Lao PDR has entered Gavi’s final phase of support, known as the accelerated transition phase in 2017 and is expected to fully transition from Gavi support in December 2021. In addition to reviewing the overall health care system, the assessment, therefore, includes an in-depth analysis of key bottlenecks and sustainability challenges for immunization services as a marker for implementation constraints in the face of transition from external financing.

The report provides a set of policy recommendations considering ongoing health sector reforms. This reform program aims to establish an effective and sustainable system ensuring UHC for all the population, and to protect and promote health care for the people of Lao PDR. The Government of Lao PDR (GoL) is committed to attaining UHC for the entire population by 2025. The report draws from both published and unpublished literature and reports, interviews and consultations with key officials as well as data collected from a field assessment.

It should be noted that there have been some limitations to this report. These include limited access to more recent financial and expenditure data for the health sector, limited

access to service delivery data prior to 2015 when the DHIS2 became fully operational, the evolving policy context and, especially, the recent developments of the basic service package to be financed through the NHIB—all of which may not have been fully captured.

The report consists of five sections. Section 1 provides the country context including the macroeconomic background, key health and population outcomes as well as an update on progress towards UHC. Section 2 presents an overview of the Lao health system which is followed by a description of the current situation of health financing in Lao PDR in Section 3 including trends in levels and composition of health expenditures with a focus on key externally financed health programs. Section 4 takes a closer look at the immunization program and discusses service delivery and financial sustainability challenges for the program, both at the system and programmatic levels. Section 5 presents key policy recommendations emerging from this assessment.





Section 1

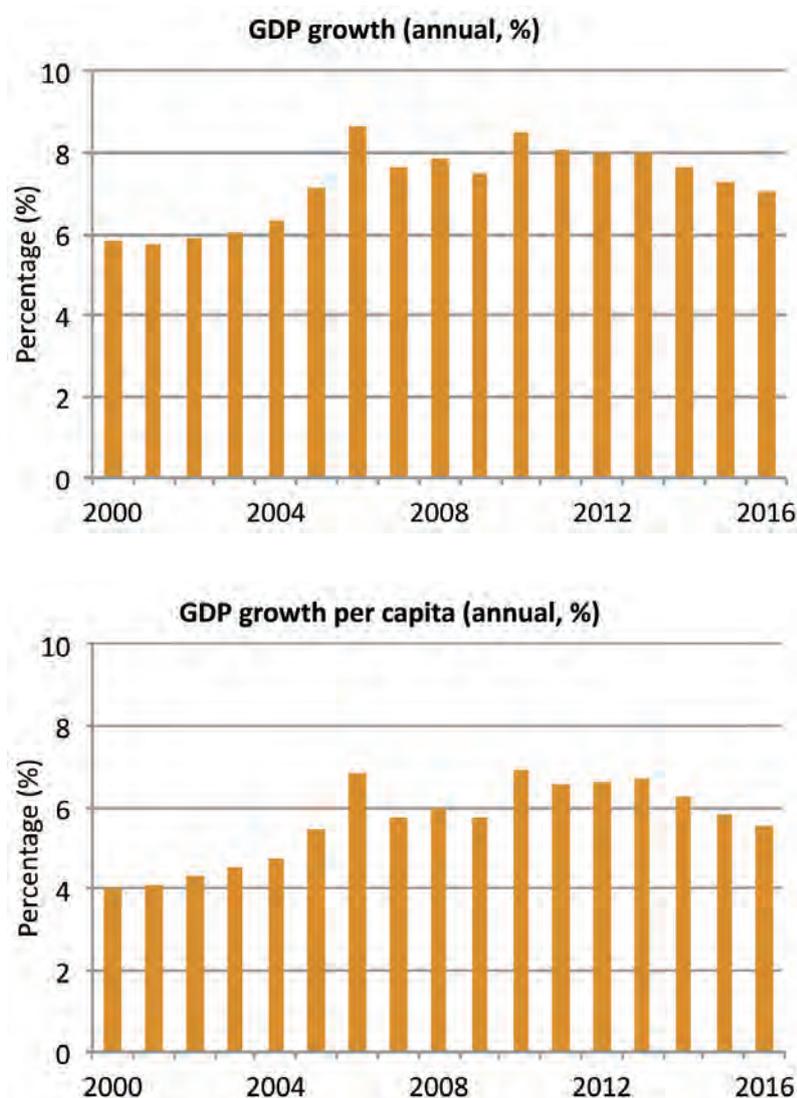
Country Context



1.1 Economic Growth, Poverty and Shared Prosperity

During the period 2005 to 2015 the economy of Lao PDR has been one of the fastest growing economies in the world—with an average GDP growth rate of 7.8 percent per annum and GDP per capita growth rate of 6.1 percent per annum (Figure 1-1). Growth has been boosted by the resource sector and by accommodative macroeconomic policies on both the fiscal and monetary fronts. Natural resources—including mining, hydropower and forestry (accounting for 44 percent of total wealth in 2014)—were key drivers of growth in the last decade. During the 2000s, growth was driven by mining; but a decline in prices, lower grade reserves, and sector regulation issues have lowered its contribution more recently.

Figure 1-1: Year-on-year Economic Growth in Lao PDR (2000–16)



Source: World Bank 2017.

By 2011, the country had reached the status of a lower-middle-income country. GNI per capita and GDP per capita have continued to increase and reached US\$2,353 and US\$2,150 respectively as of 2016. Poverty rates have declined significantly, but still less proportionate to economic growth. The national poverty rate declined from 33.5 percent in 2002 to 23.2 percent in 2012 (Figure 1-2). In 2016, about 47 percent of the population lived on less than US\$3.10 a day and about 14 percent on under US\$1.90 a day. The reduction in poverty was mainly driven by an increase in household income due to broader economic opportunities—including an increase in nonagricultural employment—higher educational attainment, and improved access to land.

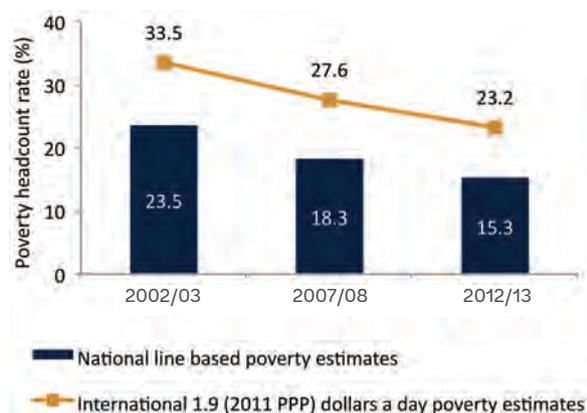
The sharing of the benefit of growth could, however, be improved: the growth elasticity of poverty⁵ was around -0.4 between 2007 and 2012 as GDP growth did not translate into an increase in household consumption of the same magnitude. Consumption per capita has grown at an average of only 2.2 percent annually between 2002-03 and 2012-13, and the increase was even lower at 1.3 percent per year on average for the bottom 40 percent of the population. As a consequence, inequality has also widened - the GINI index has increased from 32.5 in 2002-03 to 36.2 in 2012-13.

Despite the decline in extreme poverty defined as less than US\$1.90 a day, the increasing poverty of some of the nonLao-Tai ethnic groups (Figure 1-3) and rising income inequality is cause for concern. There is growing evidence of the importance of growth that, when shared more equitably, can contribute to less vulnerability of the population. Ethnic minorities lag the Lao-Tai ethnic majority at all levels of welfare including health, with the poor among ethnic minorities being worse off than the poor among the Lao-Tai, and the better off among ethnic minorities still being poorer than the nonpoor Lao-Tai. Among the nonLao-Tai ethnic groups, poverty rates are highest among the Mon-Khmer at 42 percent and Hmong-Mien at 40 percent which showed an increasing trend between 2003 and 2013. Overall, ethnic minorities account for two-thirds of the poor while their share in the total population is only one-third.

⁵ The growth elasticity of poverty means the percentage reduction in poverty rates associated with a 1 percent change in GDP per capita. In the case of Lao PDR, for a 1 percent increase in GDP per capita, poverty fell by around 0.4 percent during 2007-12. This was one of the lowest in the region.

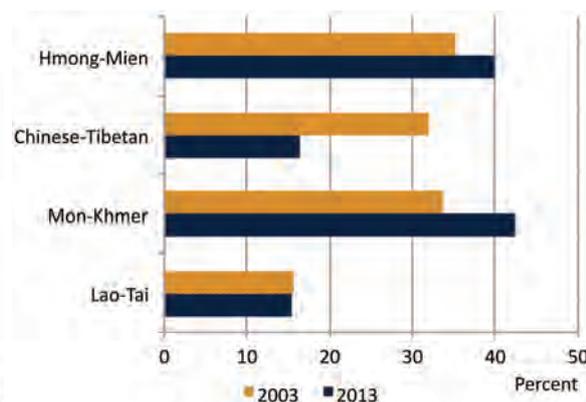


Figure 1-2: Poverty Trend in Lao PDR



Source: Lao Statistics Bureau 2014.

Figure 1-3: Poverty Rates by Head of Household Characteristics



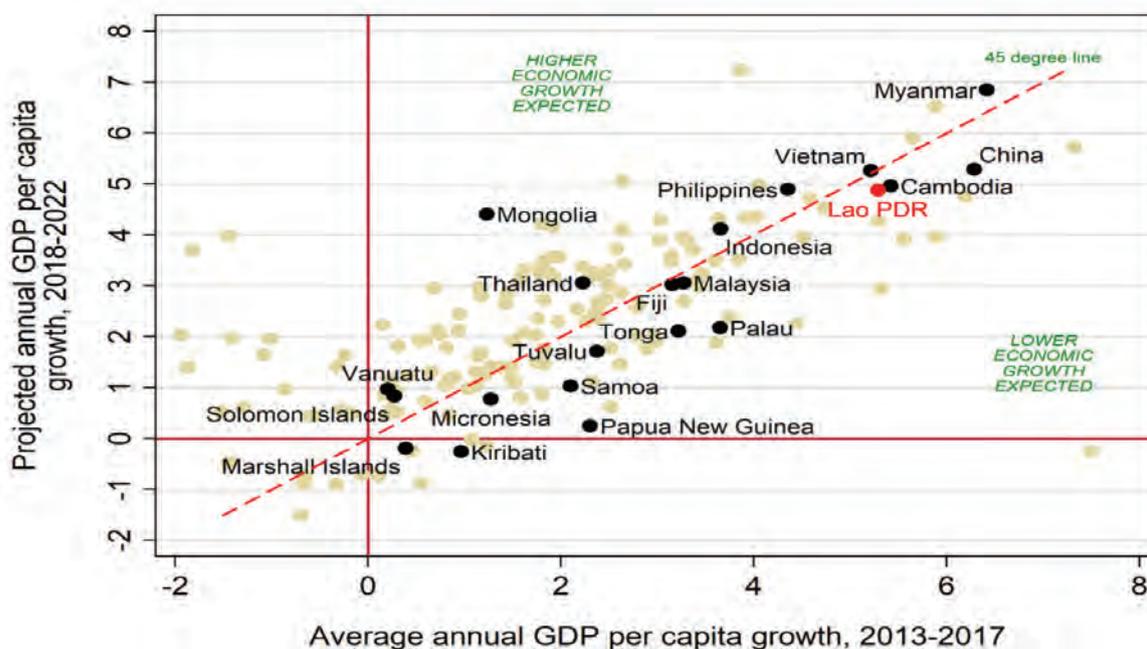
Source: Lao Statistics Bureau 2014.

There is also a significant gender gap, especially when considering nonmonetary dimensions of welfare caused by, and leading to, early marriage, high teenage pregnancy, maternal mortality and school dropout rates, and low literacy among women.

Even households that have escaped poverty remain vulnerable to financial shocks such as catastrophic health expenditure in the absence of adequate financial protection. About two-thirds of the poor in 2007-08 had risen above the poverty line in 2012-13, but one-half of them stayed under 50 percent above the poverty line and remained very vulnerable to falling back into poverty. On the other hand, one-half of the poor in 2012-13 had been previously nonpoor and about one-half the population with a consumption of double the poverty rate in 2007-08 fell into a lower consumption group by 2012-13, indicating a high rate of household vulnerability overall.

While economic growth slowed slightly in 2016 to around 7 percent from 7.4 percent in 2015, the macroeconomic environment is expected to remain broadly favorable over the next few years. Growth has recently become more broad-based, including the service sector, agriculture, manufacturing, construction and electricity, gas and water. According to the IMF's growth projections, economic growth projections for the upcoming years (2017-21) are only slightly lower than for 2011-15 at an average of 7.2 percent per year—higher than for most regional peers (Figure 1-4). While economic growth has, until now, largely been driven by national resources which is capital intensive and creates fewer jobs, this change to a more broad-based economic growth has the potential to more effectively reduce poverty.

Figure 1-4: Projected Annual GDP Growth (2017–21) versus Annual GDP Growth (2011–15)



Source: IMF 2016.

Concerns about long-term sustainability of growth remain. Slow improvement in infrastructure, comparatively low levels of human and physical capital, as well as weak governance arrangements and rule of law render the country uncompetitive except for the resource sector and hamper the development of the private sector. Furthermore, economic growth has come at the cost of a high rate of depletion of natural resources (twice the rate of countries at a similar level of development). Resource rents have not always been converted into government revenue or invested in human development efficiently.

While government expenditures generally tracked increasing revenues until 2012, the expenditure-revenue gap has begun to widen since then and is expected to further deteriorate in fiscal 2016 due to a shortfall of revenues (Figure 1-5). The shortfall is largely attributed to lower commodity prices as well as lower grants from development assistance. Grants declined from 5.4 percent of GDP in fiscal year 2013/14 to 2.3 percent in 2014/15. As a result, total revenues as a ratio of GDP are estimated to have declined to 19.6 percent in fiscal year 2015/16 from 23 percent of GDP in fiscal 2015 and the fiscal deficit has widened (Figure 1-6).

The fiscal situation is characterized by a narrow tax base, an increase in public spending in the effort to address the shortcomings in infrastructure, and inefficient spending. Tax rates are broadly at the same level as in other countries in the region. Wages and allowances account for about two-fifth of total expenditure which, together with high capital spending, undercuts the leeway for nonwage recurrent spending which is essential for the improvement of public services.

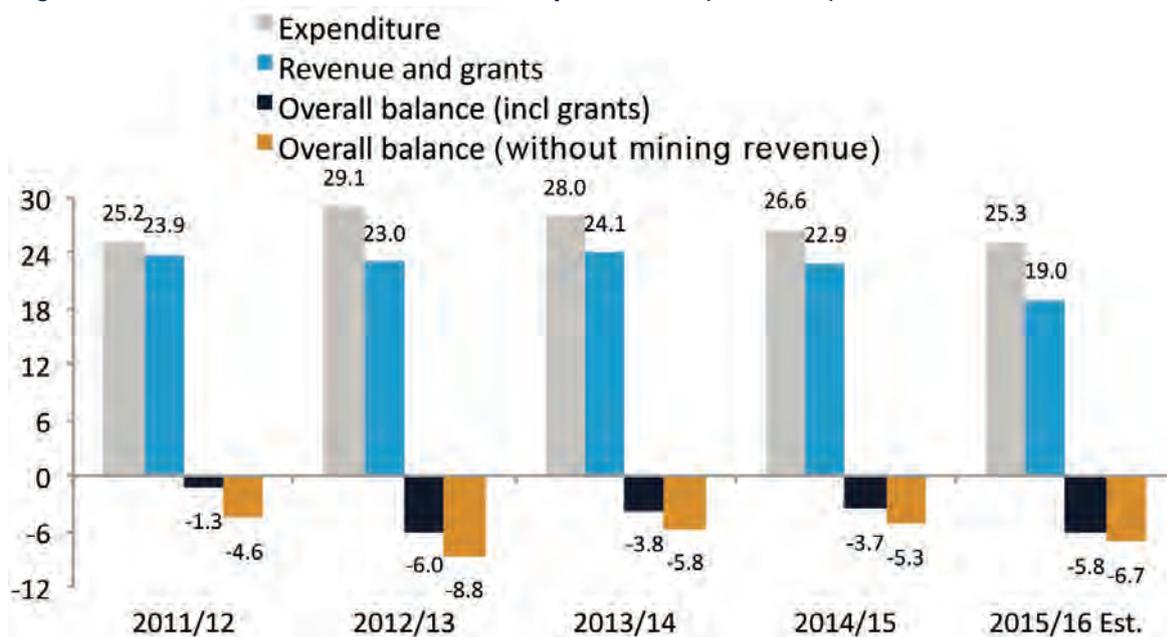
Figure 1-5: Government Revenues and Expenditures (billions of LAK)



Source: World Bank 2017.

Note: Data are in 2015 constant local currency units.

Figure 1-6: Government Revenues and Expenditures (% of GDP)

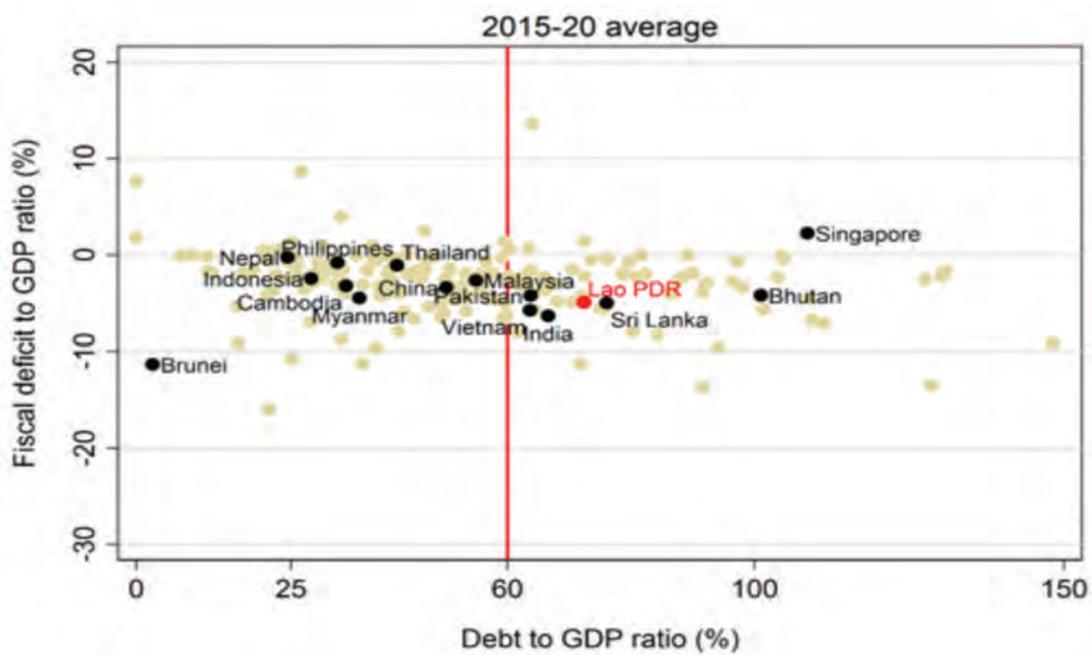


Source: World Bank 2017.

Outstanding public debt at the end of 2016 was almost 66 percent of GDP which is relatively high compared to regional neighbors such as Cambodia and Myanmar (Figure 1-7).

It is, in fact, further projected to reach 70 percent of GDP in 2018 (Figure 1-8). As a consequence, the 2016 Joint IMF-World Bank Debt Sustainability Analysis has elevated the risk of debt distress from moderate to high. Due to the high share of foreign-currency-denominated debt, large and sudden exchange rate depreciation could put debt dynamics on an unsustainable path. Though revenues from large resource projects are expected to mitigate risks over the long term, there is an urgent need to recalibrate fiscal policy to rebuild fiscal buffers.

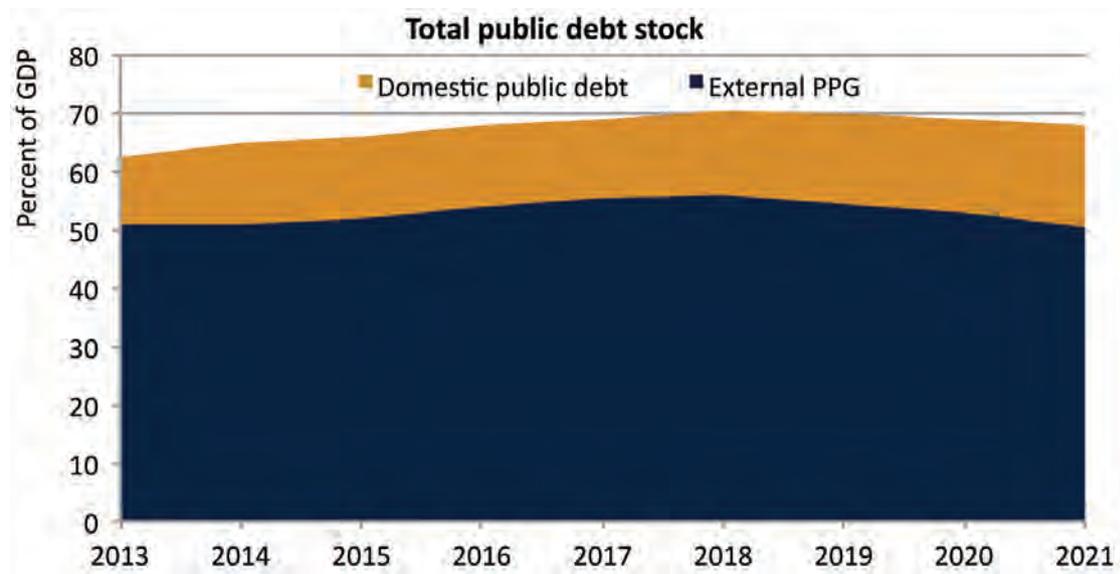
Figure 1-7: Fiscal Deficit and Debt-to-GDP Ratio (2015–20)



Source: IMF 2016.

Note: x axis in log scale.

Figure 1-8: Public and Publicly Guaranteed (PPG) Debt (2013–21)



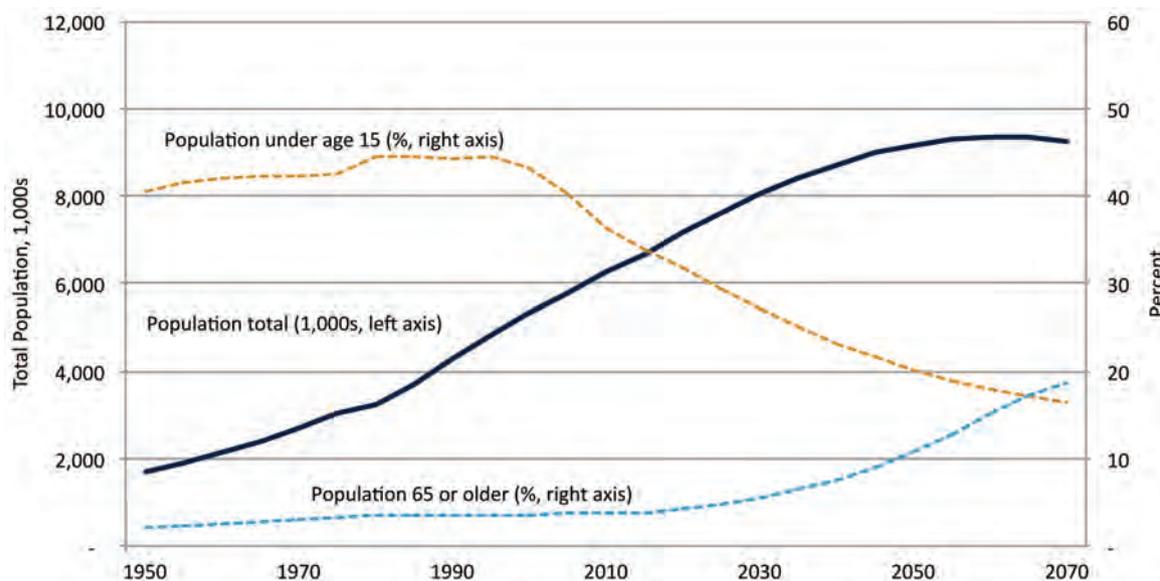
Source: IMF 2017.



1.2 Demographics and Population Health Outcomes

The Population and Housing Census (Lao Statistics Bureau, 2015) estimated the population of Lao PDR at around 6.5 million people—a figure that is projected to peak at 10.9 million around 2070 (Figure 1-9). The total fertility rate has steadily declined from a peak of 6.4 births per woman in 1984 to 3.0 in 2014. The population growth rate was 1.7 percent in 2015. The country has a young population, with the median age rising by five years from 18.5 in 2005 to 23.5 years of age in 2015.

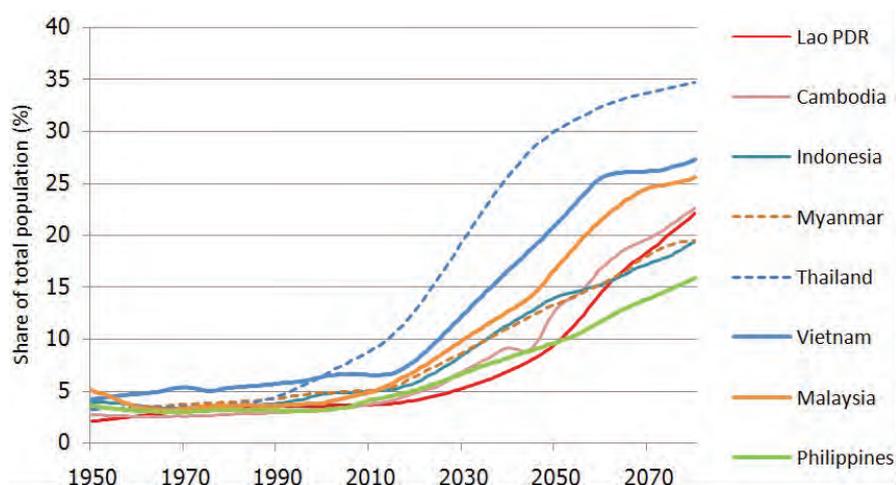
Figure 1-9: Total Population and Shares of Population Aged Under 15 and Aged 65 and Above (1950–2070)



Source: United Nations Population Division 2017.

The age distribution of a population is an important factor influencing the utilization of health services: in general, younger and older subgroups tend to have much higher utilization rates. The proportion of children aged under 15 years declined from 39 percent in 2005 to 33 percent in 2015 and is projected to further decrease to around 21.6 percent in 2050 (Figure 1-9). The share of population aged older than 65 years in Lao PDR in 2016 is only 3.9 percent, lower than in neighboring countries like Cambodia (4.3 percent), Vietnam (6.9 percent) or Thailand (10.9 percent). This share of elderly people is, however, projected to increase at an accelerating rate and to reach 10 percent of the total population in 2050 and over 20 percent by the year 2070 (Figure 1-10).

Figure 1-10: Share of Population Aged 65 and Above (1950-2080)

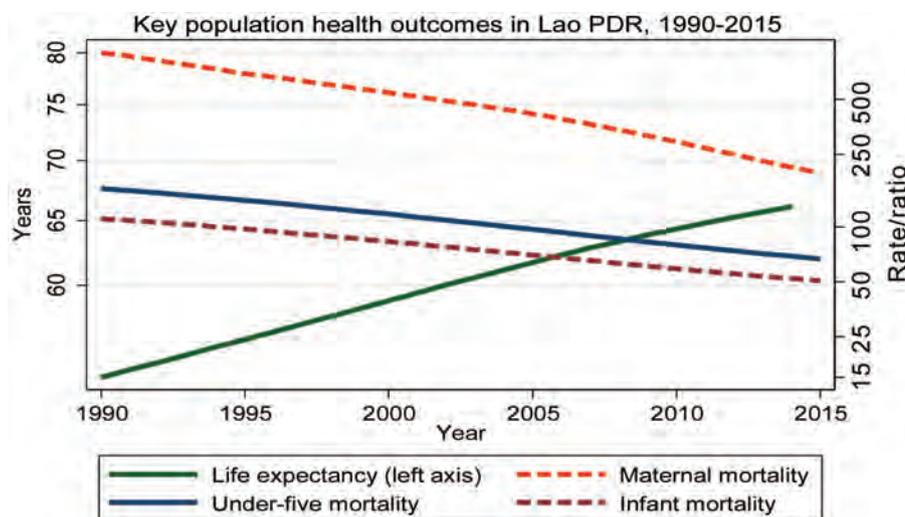


Source: United Nations Population Division 2017.

Over the past decades, Lao PDR has made consistent and substantial progress in key population health outcomes. Life expectancy at birth has steadily increased—from 43 years in 1960 to 54 years in 1990 and 66 years in 2015 (Figure 1-11). The infant mortality rate dropped from 135 per 1,000 live births in 1980 to 51 per 1,000 live births in 2015, while mortality of children aged under five years declined from 200 to 67 over the same period.

The maternal mortality rate (MMR) also decreased significantly, from 905 per 100,000 live births in 1990 to 197 per 100,000 live births in 2015. Lao PDR has narrowly missed the child health MDG (two-thirds reduction in under-five mortality over the period 1990–2015), but has surpassed the maternal health MDG (75 percent reduction in MMR over the same period). Nevertheless, Lao PDR is still quite far from attaining the SDG target of an under-five mortality rate of 25 per 1,000 live births by 2030.

Figure 1-11: Key Population Health Outcomes, 1990–2015

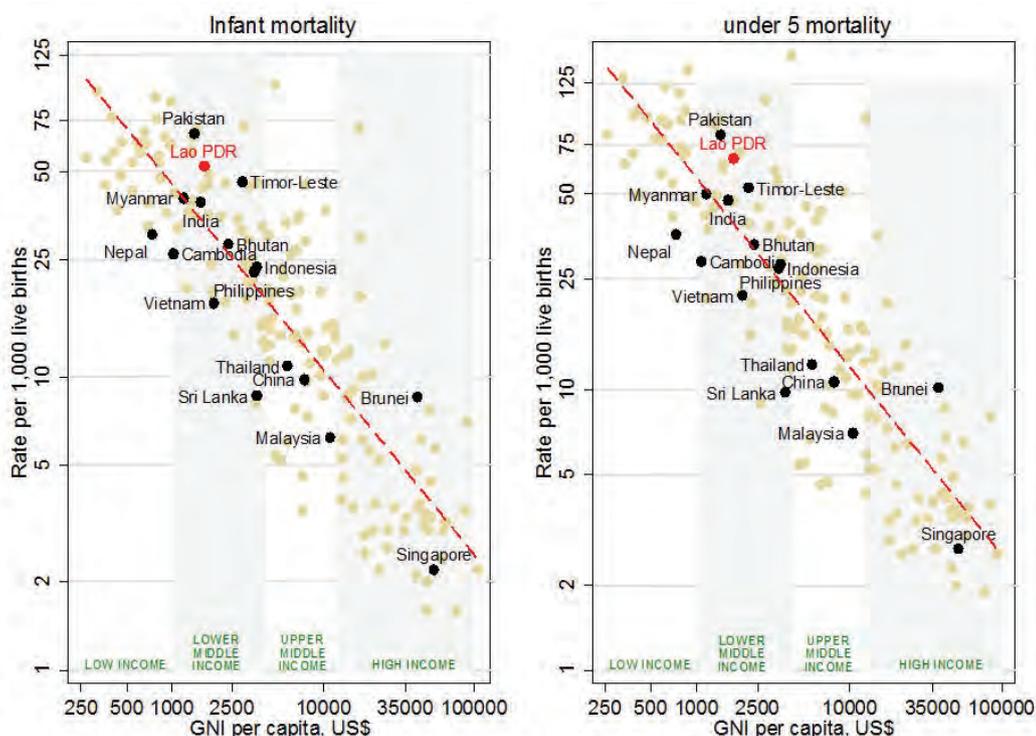


Source: World Bank 2017.

Note: MMR per 100,000 live births, under-5 and infant mortality rates per 1,000 live births.

Despite this measurable progress on improving health outcomes over the past decades, substantial challenges remain. This is especially true for maternal and child health (MCH) outcomes which are worse than global rates as well as within the East Asia and Pacific region. Under-five and infant mortality rates are higher than expected relative to GNI per capita (Figure 1-12). According to the 2015 data from the World Bank, the infant and under-five mortality rates are 51 and 67 per 1,000 live births respectively⁶, and the MMR is also high at 197 per 100,000 live births, significantly higher than, for example, neighboring Cambodia (161) which had started from a higher level in 1990.

Figure 1-12: Infant and Under-five Mortality Rates Relative to Income (2014)



Source: World Bank 2017.
 Note: Both x and y axes in log scale.

⁶ The 2015 Census data indicate that the infant and under-five mortality rates are 57 and 86 per 1,000 live births respectively, which are slightly higher than the data from the World Bank. For the global comparison, the World Bank data was used in Figure 1-12.

Malnutrition remains a significant challenge. In 2011, more than one-quarter of children aged under five years (26.6 percent) in Lao PDR were underweight and more than 44 percent were stunted. Corresponding to the poor MCH and nutrition outcomes are low quality of health care and low levels of coverage and utilization of key interventions such as antenatal care (ANC), exclusive breast feeding, skilled birth attendance, and immunization (Table 1-1).

Table 1-1: Key Health Indicators (by Sociodemographic Characteristics) (%)

Indicator	Skilled Birth Attendance	At Least One ANC Visit	DPT Coverage	Measles Coverage	Malnutrition Prevalence	Stunting Prevalence
<i>Residence</i>						
Urban	79.6	83.4	67.7	71.7	16.1	27.4
Rural	30.7	45.9	51.7	61.2	29.3	48.6
<i>Region</i>						
North	31.0	45.0	56.2	62.1	26.2	51.4
Central	52.8	63.3	52.6	59.5	23.1	38.1
South	33.1	48.6	60.6	75.1	34.7	46.6
<i>Wealth status</i>						
Bottom 40%	17.4	32.5	41.7	53.1	33.1	55.4
Middle 40%	54.7	69.6	63.5	70.5	22.3	36.8
Richest 20%	90.7	91.7	81.4	81.9	12.1	19.7
<i>Language group</i>						
Lao-Tai	58.5	71.5	66.9	72.7	21.5	33.4
Mon-Khmer	20.8	36.2	49.1	61.3	36.7	55.5
Hmong-Mien	17.8	23.9	26.6	35.3	21.3	60.5
Chinese-Tibetan	18.3	24.6	31.5	44.2	42.8	60.9
All	41.5	54.2	55.5	63.7	26.6	44.2

Source: MoH and Lao Statistics Bureau 2012.

Note: Malnutrition and stunting refers to children under five years.

Box 1-1: Investing in MCH and Nutrition Interventions

Globally, investments in MCH and nutrition have been shown to not only improve population health but to also yield significant economic returns on investment. Expanding and accelerating investment in MCH and nutrition in Lao PDR would therefore yield significant health and economic benefits.

Shekar et al. (World Bank, 2016c) estimated the benefit-cost-ratio of reducing the number of stunted children by 40 percent from current levels by 2025 globally at 10.5 and for the East Asia and Pacific region at 15.8. At the country level, Bagriansky and Voladet (2013) attempted to estimate the national economic loss of child malnutrition in Lao PDR. The authors calculated the economic losses from malnutrition from four pathways: (1) net present value (NPV) of the loss of value to the future workforce due to child mortality and disability, (2) NPV of future decreased productivity due to child cognition deficit and inferior school performance, (3) current value of diminished productivity in working adults, and (4) current value of preventable health care costs and welfare utilization. In Lao PDR, about 6,000 deaths of children under five years of age annually are attributed to child malnutrition—about one-third of all deaths in this age group. The total economic loss due to child malnutrition is estimated to be at least US\$200 million annually, representing 2.4 percent of the country's GDP in 2013.

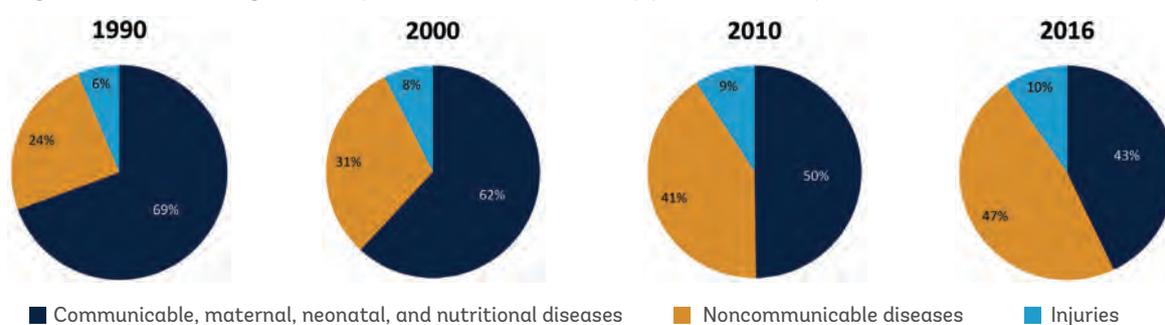
A cost-benefit analysis was conducted to estimate the impact of the World Bank's investment in MCH and nutrition services in Lao PDR under the Health Governance and Nutrition Development Project (HGNDP) being implemented by the Ministry of Health between 2016 and 2020 (World Bank, 2017b). Interventions include antenatal care, skilled birth attendance, exclusive breastfeeding of children from birth to six months of age, clean postnatal practices, education on complementary feeding of newborns, and improved immunization. The investment is projected to prevent 1,566 deaths of children under five years of age and more than 13,000 instances of stunting. The under-five mortality rate is estimated to decline from 66.7 in 2015 to 61.3 per 1,000 live births in 2020. Each DALY saved through the project has a cost of US\$246—which is “very cost-effective” according to WHO criteria. Overall the investment in MCH of US\$26.4 million between 2016 and 2020 is expected to yield an economic benefit of between US\$243.8 million and US\$731.5 million from reduced child mortality alone. The benefit-cost ratio is estimated to range from 9.2 to 27.7, meaning that each dollar invested could generate up to US\$27.7 in benefits.

As in several other countries in the region, the health system in Lao PDR is facing an epidemiological transition from a BoD being dominated by communicable, maternal, neonatal and nutritional diseases to a pattern in which NCDs have taken a leading role. In 1990, 69 percent of BoD was caused by communicable diseases, maternal and neonatal disorders, and nutritional deficiencies, and only 24 percent by NCDs. In the following years the share of NCDs in BoD increased steadily while the share of communicable diseases diminished, and by 2016 the proportion of NCDs (47 percent) had surpassed that of communicable diseases (43 percent) (Figure 1-13). While the lifestyle and chronic diseases are new challenges to reckon with, the challenge of conventional communicable and mother-child health issues remains very high, creating a classic ‘dual burden of disease’ that the country will continue to face for some more time.





Figure 1-13: BoD by Cause (Share of DALYs Lost) (1990–2016)



Source: IHME 2017b.

Note: DALY: Disability-adjusted Life Years. DALYs refer to aggregated healthy years of time lost at the population level as a result of disease-related morbidity and premature mortality.

This trend is expected to continue in the coming years. While lower respiratory infections and neonatal preterm birth complications still account for the largest share of DALYs lost, causing 12.4 percent and 7.9 percent of the disease burden respectively in 2016, their share has decreased significantly from 1990 (18.3 percent and 8.9 percent respectively) (Table 1-2).

This shift in BoD was brought by substantial progress in reducing the incidence of diseases preventable by immunization. The share in the disease burden of, for example, Measles, Tetanus, and Whooping Cough decreased from 9.60 percent, 2.72 percent, and 0.97 percent to 0.24 percent, 0.10 percent, and 0.54 percent respectively between 1990 and 2016. Measles fell from a rank of three in causes of death and disability to rank 74, Tetanus from rank 8 to rank 99, and Whooping Cough from rank 18 to rank 34. On the other hand, BoD caused by NCDs has risen dramatically. The incidence of ischemic heart disease has nearly doubled, while diabetes mellitus has jumped from rank 28 (0.65 percent) to rank 11 (2.16 percent) in causes of death and disability—an almost fourfold rise as a share of the disease burden over the period 1990–2016 (Table 1-2).

Table 1-2: Top Ten Causes of Morbidity and Premature Mortality (1990–2016)

Rank in 2016	Disease/Condition	Share of DALYs Lost (%)			
		1990	2000	2010	2016
1	Lower respiratory infections	18.3	17.4	15.1	12.4
2	Neonatal preterm birth	8.9	8.6	8.4	7.9
3	Congenital defects	3.5	4.6	5.3	5.9
4	Ischemic heart disease	2.7	3.2	4.3	5.0
5	Neonatal encephalopathy	3.6	4.0	4.7	4.7
6	Cerebrovascular disease	2.7	3.3	4.0	4.4
7	Road injuries	1.5	2.2	2.9	3.1
8	Diarrheal diseases	10.6	6.6	4.5	3.1
9	Skin diseases	0.9	1.3	1.9	2.3
10	Low back and neck pain	0.8	1.1	1.7	2.2
	DALYs per 100,000	96,718	72,305	49,568	40,551

Source: IHME 2017b.

The rise in NCDs in Lao PDR is a result of changes in several sociodemographic and lifestyle factors, with ageing being one contributory factor. Physical inactivity, unhealthy diets, tobacco use, and child and maternal malnutrition are key risk factors for NCDs. Several of these risk factors play a large and increasing role in Lao PDR: low birth weight and short gestation account for 15.0 percent of DALYs lost, child growth failure for 11.0 percent, high systolic blood pressure for 6.4 percent, and smoking for 6.3 percent. The share of metabolic risks, such as high systolic blood pressure (rank four in 2016), high plasma glucose (rank six), high body mass index (rank eight), and high total cholesterol (rank ten) increased from 6.1 percent in 1990 to 12.4 percent in 2015. Some environmental risks also contribute considerably to BoD, especially air pollution and unsafe water (rank 15), poor sanitation (rank 16), and absence of handwashing facilities (rank 17) (Table 1-3).

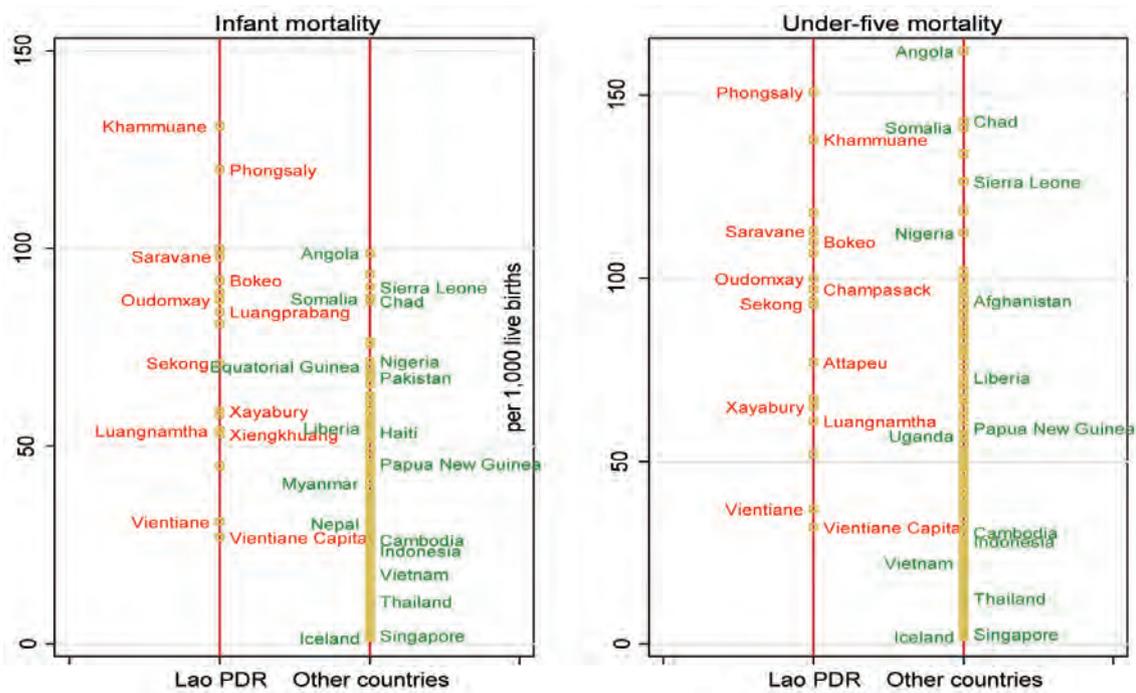
Table 1-3: Top Ten Risk Factors (1990–2016)

Rank in 2016	Risk Factor	Share of DALYs Lost (%)			
		1990	2000	2010	2016
1	Low birth weight and short gestation	17.2	16.8	16.3	15.0
2	Child growth failure	28.6	23.6	14.6	11.0
3	Household air pollution from solid fuels	11.6	11.3	10.3	9.1
4	High systolic blood pressure	3.4	4.2	5.6	6.4
5	Smoking	3.6	4.2	5.6	6.3
6	High fasting plasma glucose	2.2	3.0	4.3	5.2
7	Ambient particulate matter pollution	4.9	5.0	5.0	4.7
8	High body-mass index	0.7	1.0	2.9	3.7
9	Diet low in whole grains	1.5	1.9	2.6	3.0
10	High total cholesterol	1.6	1.9	2.6	2.9

Source: IHME 2017b.

Furthermore, the progress is uneven and health outcomes in Lao PDR vary hugely by ethnicity and geographic areas. In 2011-12, for example, infant mortality and under-five mortality rates were four to five times higher in the provinces with the highest rates compared to the province with the lowest rates (infant mortality rate of 131 in Khammuane and under-five mortality rate of 151 in Phongsaly compared to 27 and 32 respectively in Vientiane Capital) (Figure 1-14). Rates of stunting of children aged under five years were more than three times higher in the provinces with the highest rates than in the province with the lowest rate. Residents of rural areas without access to roads are particularly disadvantaged.

Figure 1-14: Infant Mortality and Under-five Mortality Rate (by Province)



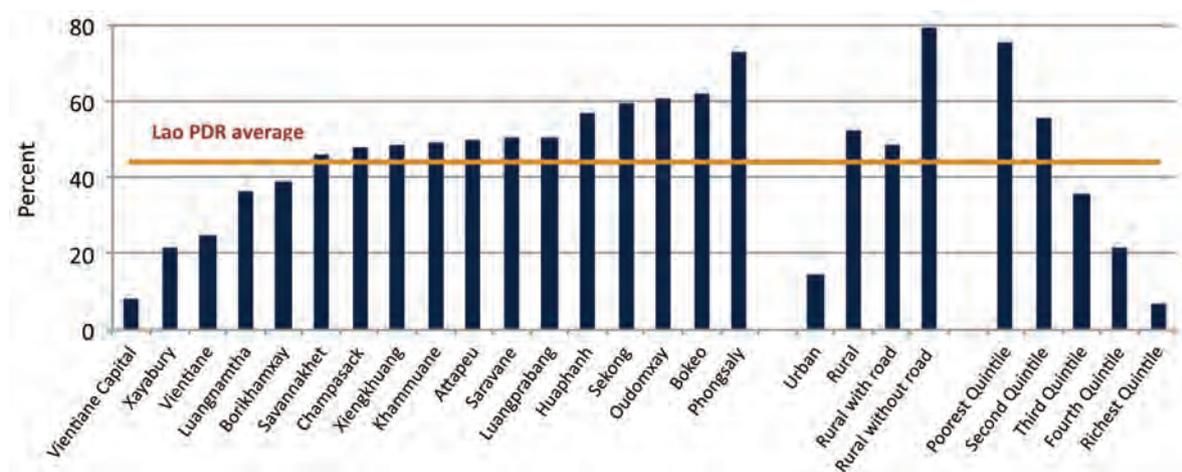
Source: World Bank 2017; MoH and Lao Statistics Bureau 2012.



There are also significant differences in health outcomes between economic groups. While, in the richest quintile, the infant mortality rate of 27 per 1,000 live births has almost reached the SDG target of 25 per 1,000 live births, the rate is almost four times higher in the poorest and the second poorest quintiles (95 and 98 respectively). The share of women in the poorest quintile who did not receive any antenatal care during the last pregnancy (75.2 percent) is more than 10 times higher than the share of women in the richest quintile (6.6 percent) (Figure 1-15).

Estimates from the Lao Social Indicators Survey (LSIS) of 2012 show that the total fertility rate among the Lao-Tai in 2012 was around 2.6, compared with 4.2 and 5.5 among the Mon-Khmer and Hmong-Mien, respectively. This was associated with low educational attainment and cultural practices in these ethnic groups. In general, the fertility rate is highest among less educated women (Martin, 1995), who are much more likely to have been married and become pregnant in their teenage years once they left school.

Figure 1-15: Share of Women Aged 15-49 Who Gave Birth in the Two Years Preceding the Survey and Did Not Receive ANC



Source: MoH and Lao Statistics Bureau 2012.

1.3 Universal Health Coverage (UHC)

Lao PDR has made significant progress in achieving the MDGs. Specifically, on the human development indicators, the country has halved extreme poverty, more than halved maternal mortality, lowered child mortality, increased primary education enrollment and achieved gender parity in primary and secondary education. More progress is, however, needed on equitable distribution of these improved health outcomes, as well as on reduction of chronic malnutrition, completion of primary and secondary education and on achieving gender parity in higher education, and in improving the role of women in employment and political participation.

While the aim is to become eligible for graduation from Least Developed Country status by 2020, minor improvement is required in GNI per capita and a more substantial improvement is required in Human Assets and Economic Vulnerability indices (Table 1-4).

Table 1-4: Human Assets and Economic Vulnerability Indices and Lao PDR Score

	Threshold	Lao PDR		Threshold	Lao PDR
GNI per capita	>\$1,242	\$1,232	Economic Vulnerability Index	<32	36.2
Human Assets Index	>66	60.8	Exposure Index		33.1
Chronic malnutrition		72.0	Economic Structure		32.2
Under-five mortality		62.8	Shock Index		39.4
Literacy rate		63.6	Natural Shocks		54.6

Source: World Bank 2017.



Lao PDR has committed to achieve UHC—a target under the new SDGs for health—by 2025 by expanding population and service coverage, and improving financial protection. In the mid-term, GoL aims to cover 80 percent of the population with an essential package of services and appropriate financial protection by 2020. The Eighth National Health Sector Development Plan 2016-20 strives for an acceleration of health sector reform, in particular, the development of human resources, the improvement of governance and financing, and the completion of the comprehensive health information system.

The Health Sector Reform Strategy and Framework till 2025 (MoH, 2016b) outlines the key strategies and three implementation phases. Phase Two (2016–20) of the Strategy aims to ensure the availability of essential health services of reasonably good quality to most of the population. Phase Three (2021-25) is expected to complete the health sector reform and reach UHC with an adequate service benefit package and appropriate financial protection for a vast majority of the population. It is expected that over 95 percent of the population will be covered by the prepayment scheme, and that OOP payments will be reduced from 39 percent to less than 30 percent of total health expenditure (THE).

Using the WHO-WB UHC monitoring framework, Lao PDR is lagging in many of the key indicators and concerted effort is needed to make further progress toward UHC. The available data on preventive, promotive, and treatment service coverage and financial protection indicators are summarized in Tables 1-5 and 1-6. In terms of preventive, promotive, and treatment indicators, Lao PDR's performance is patchy. Tobacco nonuse, access to improved water sources, antiretroviral therapy (ARV), tuberculosis (TB) treatment, and coverage rates of ANC and skilled birth attendance, in particular, are lower than the average for the East Asia and Pacific Region and are also lower than the average for lower-middle-income countries, except for ARV. Access to family planning, Diphtheria, Tetanus and Pertussis (DTP3) vaccine coverage and access to improved sanitation are on par with the average for the region and countries at similar stages of economic development (Table 1-5).

Table 1-5: UHC Indicators: Preventive, Promotive, and Treatment (2010–16) (%)

Country	Preventive/Promotive							Treatment	
	Family Planning	ANC	Skilled Birth Attendance	DTP3	Tobacco Nonuse	Water	Sanitation	ARV	TB
Cambodia	56	89	89	90	77	76	42	80	67
China	88	95	100	99	74	96	76	52	82
Indonesia	63	96	87	79	62	87	61	13	27
Lao PDR	50	53	40	82	66	76	71	41	30
Malaysia	49	97	99	98	78	98	96	37	68
Philippines	55	95	73	86	73	92	74	32	70
Thailand	79	98	100	99	79	98	93	69	47
Vietnam	76	96	94	96	76	98	78	47	70
<i>East Asia and Pacific</i>	<i>52</i>	<i>90</i>	<i>91</i>	<i>89</i>	<i>73</i>	<i>89</i>	<i>73</i>	<i>45</i>	<i>62</i>
<i>Lower-middle-income</i>	<i>49</i>	<i>86</i>	<i>80</i>	<i>86</i>	<i>77</i>	<i>84</i>	<i>61</i>	<i>38</i>	<i>56</i>

Source: World Bank 2017.

Note: Attainment less than 80 percent is highlighted in orange.

The prepaid or pooled share of THE in Lao PDR at 61 percent is below the average of the East Asia and Pacific Region; however, it is on par with other lower-middle-income countries (Table 1-6). This is largely because the high share of external sources in financing health care which account for about one-half of this pooled share. OOP spending on health hardly ever exceeds 25 percent of household spending (for details see Section 3.4).

Table 1-6: UHC Indicators: Financial Protection

Country	Prepaid/pooled Share of THE (%)	OOP <25% Total Household Consumption (%)	Neither pushed nor further pushes into poverty (%)
Cambodia	26	98	98
China	68	95	87
Indonesia	53	99	95
Lao PDR	61	100	94
Malaysia	65	NA	NA
Philippines	46	99	86
Thailand	88	99	100
Vietnam	63	98	96
<i>East Asia and Pacific</i>	<i>76</i>	<i>99</i>	<i>95</i>
<i>Lower-middle-income</i>	<i>62</i>	<i>99</i>	<i>91</i>

Source: World Bank 2017.

Note: Attainment less than 80 percent is highlighted in orange.





Section 2

Health System

This section discusses health care organization and delivery in Lao PDR, planning and budgeting in the health sector, the availability, quality and use of human resources, and service utilization. The section is based on published and unpublished reports (referenced) as well as informal communication and does not present primary data or field observations.

2.1 Health Care Organization and Delivery

Health care in Lao PDR is mainly provided through the public system, with three administrative levels (central, provincial, and district) and four levels of service providers (central, provincial, district, and health center). Additional community-based services are currently being defined as part of the ongoing efforts to define a service delivery package.

At the central level, the Ministry of Health (MoH) is responsible for the management and organization of health services, health information, human resources for health (HRH), health financing, health sector development and planning, and international cooperation regarding health. MoH also functions as a regulatory agent (food and drug safety, administration of pharmaceuticals and equipment, and licensing of private health facilities) and operates medical colleges and universities, national medical centers, and central hospitals.

At the provincial level, provincial health departments (PHDs) operate under shared control of the provincial government (in terms of direction, organization, payroll, and operations) and MoH (in terms of technical direction, guidance, monitoring and inspection). PHDs (including the Capital Health Office that is responsible for Vientiane) run the provincial hospitals and provide technical direction, guidance, monitoring, and inspection for the district health offices (DHOs).

DHOs are responsible for preventive and curative services at the district level. There are district units for preventive medicine (immunization, hygiene, MCH) and district hospitals that admit patients for basic treatment of common diseases and emergency treatment. Health centers provide primary health services, including prevention, diagnosis, and treatment at the level of their capacities. Village health workers (VHWs), selected by the village health committee and trained for three months, provide basic curative care.

In 2016, there were a total of 1,233 health facilities including five central hospitals, 38 army and police hospitals, 17 provincial hospitals, 137 district hospitals, and 1,026 health centers. Maldistribution between demand for services and distribution of human resources has been identified as one major problem of the health service delivery system. Because the population prefers central or provincial hospitals over district hospitals and health centers, the former facilities suffer from extensive workload, while the latter face underutilization and overstaffing (World Bank, 2016a). Generally, HRH density of physicians and skilled health professionals overall is low compared to regional levels and WHO recommendations.

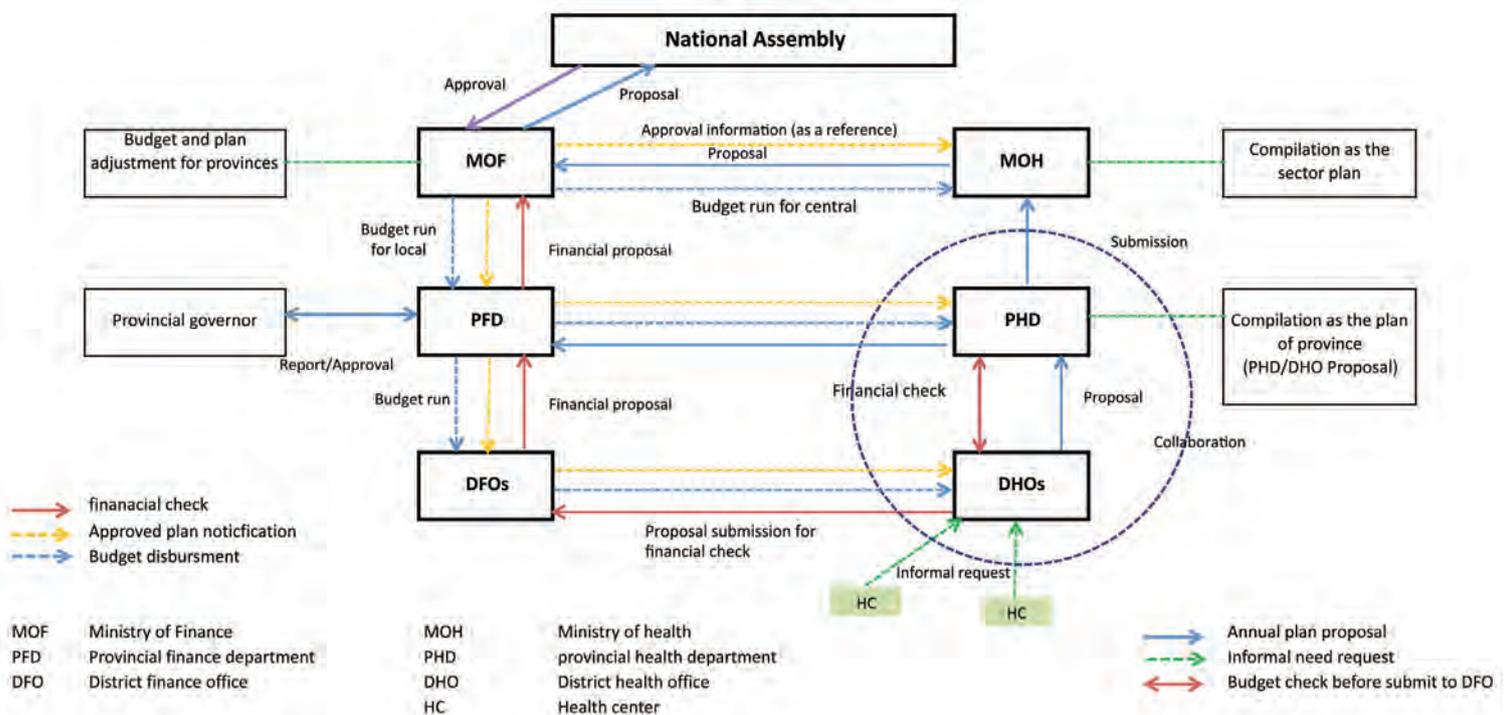
The private health sector—comprising pharmacies, practitioners of traditional medicine, and private clinics—has expanded in recent years. Regulatory capacity to manage the private health sector is very limited and requires new skills and expertise that has not been

a focus area for MoH in the past. As public health workers also often operate their own private facilities, there exists the risk of parallel structures, conflicts of interest, and incentives for unofficial payments to obtain better services.

2.2 Health Budgeting⁷

Planning and budgeting in the Lao PDR health sector is a collective exercise and undertaken across the national and subnational levels. The overall responsibility for budget planning rests with MoF; however, the Ministry of Planning and Investment (MoPI) also plays a significant role and has authority over capital investment decisions. The Cabinet determines the overall budget envelope for both recurrent and investment expenditures, based on advice from MoF. MoPI provides inputs on funding from development partners and then prepares the Public Investment Program which covers all investment expenditures financed domestically as well as externally by donors. In MoH, the institutional responsibility for compiling the annual budget plan is shared between Department of Finance (Chapters 60–63) and Department of Planning and International Cooperation (Chapters 66, 67 including official development assistance (ODA)) and provinces. The authority for preparing provincial and district health sector budgets rests with provincial governments.

Figure 2-1: Budget Process in the Health Sector



Source: MOH with elaboration by World Bank Lao PDR HNP team.

⁷ This section was adapted by the Lao PDR HNP team from an internal note on planning and budgeting contributed by Jaya Bhagat and Nang Mo Kham of the World Bank, based on an analytical mission undertaken by them in February 2017.

Figure 2-1 presents an overview of the budget process in the health sector. Budget preparation begins at the district level. DHOs prepare annual budget plans, and before submission of proposals to the District Finance Office (DFO) for approval, the plan is sent to PHDs for financial review. DHOs initiate the budget process based on district requirements and informal requests from the health centers. District requests are consolidated at the provincial level and, along with the provincial budget requirements, submitted to MoH as well as the Provincial Finance Department (PFD). Likewise, PFD receives health budget proposals from PHDs and DFOs, and adds them to an annual budget proposal for the entire province. PFDs then submit provincial budget proposals to MoF for consolidation, and MoF submits them to the National Assembly for approval. When PFDs receive approved plan notifications from MoF (generally as per approval by the National Assembly), they approve budgets to PHOs according to the budget ceiling MoF has determined. It is understood that, in practice, the overall budget envelope for each province is determined by MoF, whereas provincial governors have authority to reallocate budgets across sectors as per their provincial requirements. Only when funds are received at district level are they provided for the health centers for implementation of the proposed activity. Health centers do not operate separate bank accounts.

Budget plan approval occurs only after the endorsement by the National Assembly of the budget plan for the respective fiscal year; this normally happens in the quarter preceding the start of the respective year. Once the annual budget plan is formally approved, PFDs can request the next quarterly tranche based on the approved plan. PHDs likewise submit quarterly budget requests to PFD for nonsalary expenditures (salaries for government staff are paid directly from MoH) and, once approved, receive the budget in their dedicated account at the provincial treasury office. DHOs in turn request their quarterly budget of nonsalary budget from PHD, and receive their budget in the respective account with the treasury office at district level.

After approval of the Annual Budget by the National Assembly, MoF announces the budget allocation to each province. Based on the approved allocation, PFDs revise and reallocate the annual budget to PHD, DHO and health centers. PHD collects quarterly budget proposals from each entity including details of the proposed activities. A summary of the overall provincial quarterly health budget is then submitted to PFD for approval.

Actual fund disbursement depends on availability of funds and cash with the provincial and district treasury. After expending the budget for an activity, each unit prepares a summary of the quarterly expenditure and submits this along with an activity report to PHD. Governors also have the authority to reallocate sector budgets; some provinces allocate a larger share of the provincial budget and, therefore, do reach the 9 percent health budget target while others fall substantially below this target based on the political priorities of the province.

The quarterly budget is credited with the respective treasury office (at provincial or district level) once the request is approved by the respective office. Health centers are not considered real budget entities and do not have a bank account. For drug purchases, as an example, health centers submit their purchase order (PO) to the district hospital, which

prepares an aggregate PO for the whole district and submits it to the drug supplier selected by the province or MoH. This process ensures economies of scale and some oversight in terms of drug purchases and consumption at health center level. It does, however, reduce the ability of the health center to address urgent needs such as equipment repair or replacement, purchase of required supplies, and undertaking outreach. This complex budget process at times leads to delays and inability to undertake both planned and emergency work required.



2.3 Human Resources⁸

2.3.1 Human Resources for Health (HRH)

The number of health workers in Lao PDR had essentially stagnated after 1998; by 2012, the ratio of total health workers per 1,000 population was very low at 2.24. The annual quota of posts allocated to MoH by the Ministry of Home Affairs (MoHA) was substantially increased in 2013 and 2014 resulting in an increase in the ratio of health staff in health facilities from 1.8 per 1,000 population in 2010 to 3.2 in 2015-16 (Table 2-1). This brought Lao PDR to the same level of health professionals per 1,000 population as Cambodia, Papua New Guinea, Samoa, Solomon Islands, Vanuatu and Vietnam. Countries with workforce densities below the 2.5 per 1,000 population threshold have poorer MCH indicators and outcomes, as well as slower progress towards achievement of health-related goals. GoL has adopted strengthening of the health workforce as one of the five priorities of the National Health Sector Strategy 2013–25.

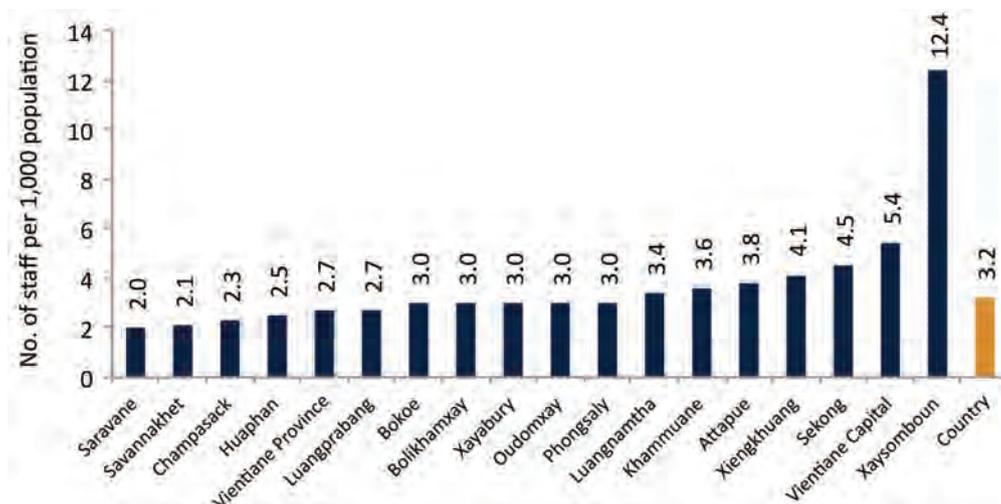
Table 2-1: Core Indicators for Human Resources for Health

Indicators	2012-13	2013-14	2014-15	2015-16
Ratio of health personnel per 1,000 population	2.24	2.88	2.87	3.22
Average number of staff per health center	2.8	4.3	5.2	4.3
Percentage of health centers with at least one community midwife (or at least three staff, including one midwife)	33.2%	36%	35.5%	68%

Source: National Health Statistics Report, FY2015-2016; Department of Organization and Personnel (DOP), MoH, 2012-2013, 2013-2014, 2015-2016.

Since 2014 great efforts have been made to improve primary health service delivery, especially for MNCH by increasing the number of staff working at the health center, especially community midwives.

Figure 2-2: Lao PDR Health Personnel per 1,000 Population (FY 2015-16), by Province

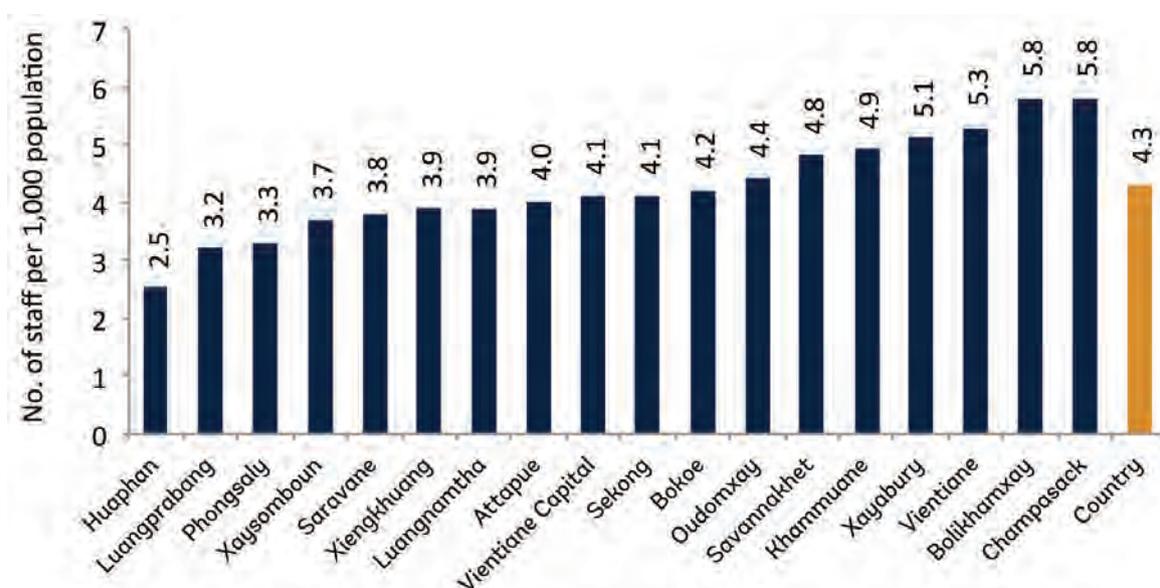


Source: MoH 2016.

⁸ This section includes unpublished information obtained from WHO, Vientiane and ADB consultants in Vientiane.

Very little has been done regarding assessing the adequacy and competency of the health workforce to address the health care needs of the population they serve. The 2006 WHO norm is that a minimum of 23 physicians, nurses and midwives per 10,000 population is necessary to achieve adequate coverage rates for selected primary health care interventions. Table 2-1 and Figure 2-2 above indicate that Lao PDR has achieved this ratio in 2015 as far as health personnel is concerned. With only 43 percent of the health workforce having a mid-level or higher education, the actual density of health professionals (physicians, nurses, midwives) is 13 per 10,000 population—after a large quota for new appointments were provided in 2015 intended especially for newly graduated community midwives. These numbers, however, do not account for staff working on a contractual basis for the provincial authorities or working as volunteers in anticipation of obtaining formal employment later. In addition, there are a significant number of VHWs (village health volunteers, members of village health committees, traditional birth attendants, and traditional healers).

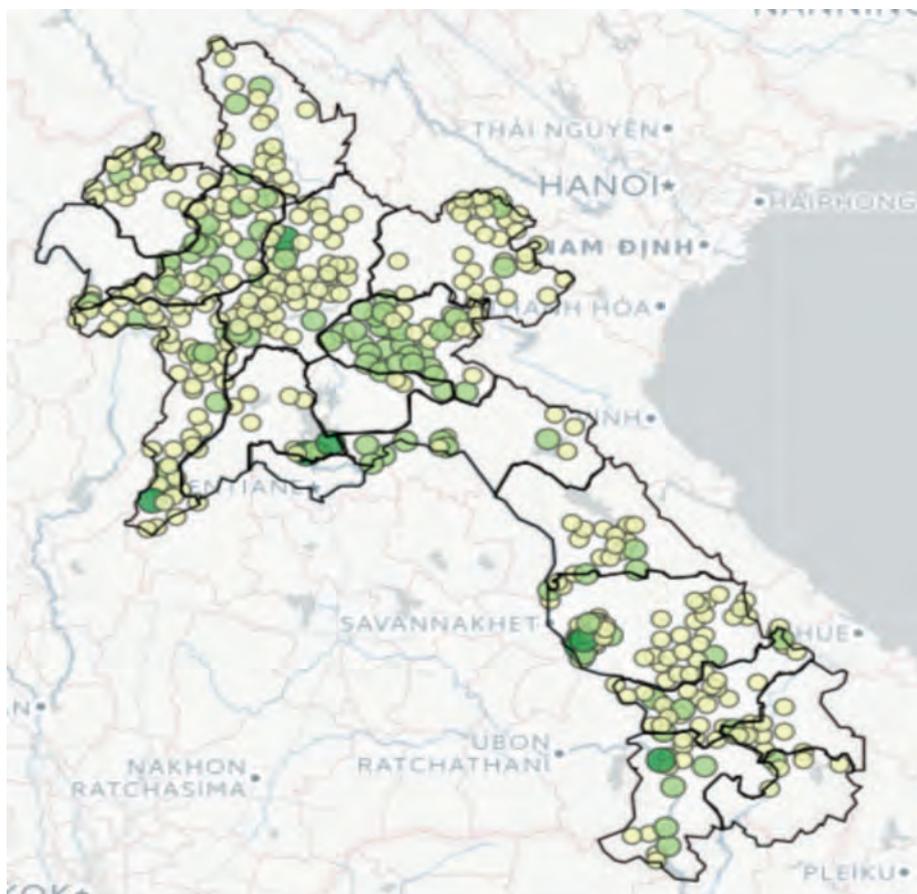
Figure 2-3: Average Number of Health Staff at Health Centers by Province (2016)



Source: MoH 2016.

Figure 2-3 shows that health centers had an overall average of 4.3 staff per facility in 2016. While this is a slight decrease compared to 2015, this is likely to be due to an increase in number of health centers and a redistribution of staff.

Figure 2-4: Distribution of Middle Level Midwives in Health Centers across Lao PDR

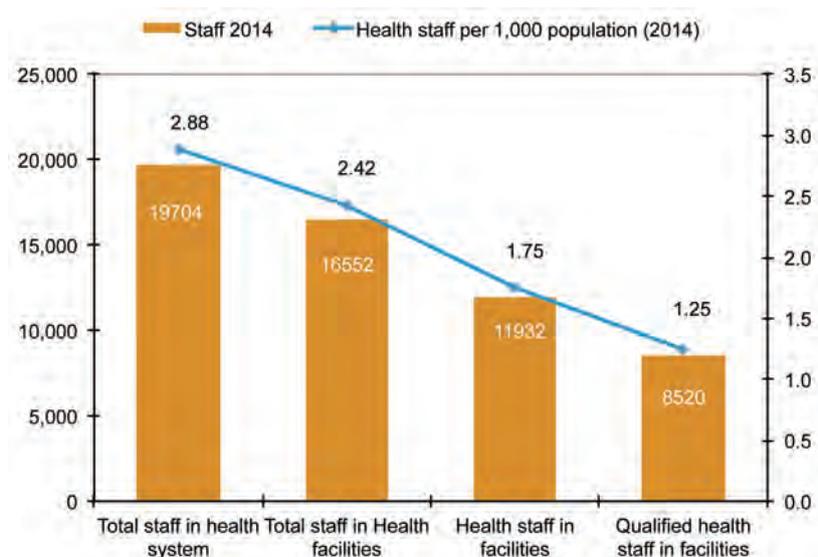


Source: MoH 2017.

While a few provinces still need to increase their numbers of midwives stationed in the health centers most provinces now have good coverage (Figure 2-4).

A study on HRH conducted by the World Bank (2014) found that the per capita density and distribution of critical HRH was low and inequitable. It was noted, however, that this occurred in the context of extremely low utilization rates of health services. This means that the productivity of health workers was also low. Improving clinical ability, for which there is some evidence of a positive association with health worker experience and with the number of health center staff working together in large lowland health centers, is, therefore, a major challenge.

Figure 2-5: Numbers and Proportions of HRH in Health Service (2014)⁹



Source: MoH 2014b.

Note: Left (Y-)axis: total number, right (Y-)axis: health staff per 1,000 population.

The ratio of health workers to population is further complicated by the fact that health professionals in Lao PDR are distributed unevenly among the provinces. There is a significant gap between the ratio of health professionals to population in the capital city and in rural areas. For example, while there were 0.81 doctors per 1,000 population in Vientiane in 2015, the ratio for areas outside the capital was only 0.18. This discrepancy also applies to professional nurses and midwives, albeit to a lesser degree (0.57-0.43), while the distribution of assistant nurses and midwives favors rural areas (0.37-0.64). These numbers account for publicly employed staff only; there is no data available for locally contracted staff in the provinces or health workers working in the private sector. Inequitable distribution of health workers also exists among different health facility types. As is the case in most other countries, well-trained health professionals prefer to work in well-equipped hospitals in the larger cities rather than in the village health centers, which are mostly located in remote, hard-to-reach areas.

⁹ Staff with middle level and over basic education refers to Doctors, Nurses and Midwives with at least two years basic education.

2.3.2 Quality of HRH

While a shortage of qualified staff at the district and health center levels still poses difficulties in some areas, the focus has shifted to quality issues. These issues include: (i) ensuring an appropriate skill mix; (ii) providing quality basic and continuing education; (iii) certifying professional competence; (iv) providing supportive supervision and opportunities for professional development; and (v) improving the performance and productivity of health personnel.

Even though civil service salaries were increased significantly in 2013, most health workers undertake secondary employment to cover the cost of living, often through working as private practitioners. There has been some progress in improving the funds available for facility maintenance and supplies through revolving drug funds (RDFs), but these funds are not normally intended to be used to supplement the salaries of workers. Decree No: 381/PM, which came into effect in December 2005, allows for the collection of fees for services at government facilities and to use these fees for increasing staff salaries and pay locally contracted staff.

The MoH cannot recruit all graduates in the health profession due to the limited number of sanctioned posts, and employment opportunities in the private sector are limited. Dual practice is common for highly experienced physicians and dentists: many run their own private clinics outside their regular working hours at public hospitals. This creates the risk of an increasing “brain drain” of highly skilled health professionals and IT specialists from the public to the private sector, as well as to externally financed institutions that usually offer a higher salary (Lao PDR, 2014; Qian et al., 2016).

The World Bank (2014) study found substantial gaps in the clinical abilities of frontline health workers to manage MDG-related clinical situations. It highlights a significant gap in the quality of health education, beginning at the preservice stage (including entry regulations or requirements for health workers) and continuing throughout the professional life of the health worker. The study suggests that there are opportunities to address the significant inefficiencies in health service delivery related to maldistribution (geographic, level, and type) and underutilization of frontline human resources, using fiscally neutral solutions.

The study suggests investment to reduce demand-side barriers such as physical access barriers, ethnolinguistic and gender barriers, and financial barriers, to increase the utilization of essential health services. Finally, the study notes the need for investment in service readiness of public health facilities to ensure the availability of essential health commodities, equipment, and infrastructure. A lack of these is noted to be just as much (if not more) a source of worker dissatisfaction in health centers than salary is.

The attainment of these improvements is, however, complex. It will depend on: (i) institutional strengthening; (ii) oversight and regulatory frameworks; (iii) systematic investment in the human capital of the sector; (iv) attracting and motivating people who can provide leadership; and (v) initiating efficient and effective approaches to the delivery of health ser-

VICES. Since 2013, there have been special efforts to upscale the production of community midwives (CMs) and the deployment of at least one CM in each health center. By 2017 more than 75 percent of all health centers will have at least one CM; in addition, approximately 10 percent of all health centers are located close to a hospital where deliveries take place and, therefore, do not require a midwife posted there.

A Health Personnel Development Strategy (HPDS) 2010-20, endorsed by GoL in 2010 with a Prime Ministerial decree (495/PM), proposed specific strategies and targets for strengthening the planning, development and management of HRH and provided tools for estimating and monitoring the required number and mix of staff at all levels. HPDS includes strategies to effectively and efficiently train and recruit a sufficient number of qualified health personnel representing all categories of staff, mix of professions, levels of seniority, gender, ethnicity and age groups who can lead, manage and deliver quality health services in different health settings to the entire Lao population. The strategy is based on five pillars that address: (i) capacity building of health personnel; (ii) utilization of health personnel; (iii) equity and equality of opportunity; (iv) health personnel management; and (v) health personnel incentives.

The 2015 mid-term review of HPDS found that some progress has been made, including an increase in the overall number of trained health personnel, and approval of a regulatory framework to register and license health care personnel. Progress on other targets, or as part of other strategies may have occurred, however, there was no formal Action Plan or reporting mechanism to capture and compare this information to the goals and targets outlined in HPDS.

Strengthening of training institutions is taking place, albeit slowly, in line with HPDS directions. The University of Health Sciences has adopted a five-year development plan, formulated quality standards, established an Educational Development Center and commenced intensive reform of the curriculum based on analysis of required competencies and teacher training. The provincial schools have developed new programs and upscaled their production of mid- and high-level staff to be deployed in the provinces.

The mid-term review underscored the need for skills, scopes and competencies to be based on the type of health services that are needed, where they should be provided, and when. This includes geographical, cultural, gender, epidemiological, education, and financial considerations, as well as health care facility utilization patterns, productivity and capacity. The review concluded that decisions on staffing numbers, skills and qualifications, and where staff are located, need to be made in response to this context. An HRH projection tool is used to provide estimates of the required numbers and mix of health workers and the associated costs of training and deployment of staff. These estimates are used in the preparation of staffing quota proposals to MoHA and this has recently led to a significant increase in the allocation of staff quotas for the health sector.

The Health Personnel Information System (HPIS) is now available and is updated regularly with inputs from the provinces, leading to timely evidence concerning the HRH situation at all levels of the system. Likewise, information on the availability of health workers at district hospitals and health centers is currently included in the monthly reports to the District Health Information System (DHIS 2) of MoH. Since 2012, DOP has been publishing an annual report with detailed information and statistics concerning the production, recruitment and deployment of health personnel with plans to extend reporting to the private sector. Further progress in this area will be possible once a system of licensing and registration of health personnel is established.

Decrees concerning functional responsibilities and job descriptions for districts (Decree 1845) and provincial health facilities (Decree 551) have been approved and disseminated to guide deployment and supervision of staff. MoH's Department of Health Care has done some additional work on the definition of scope of work at these levels but more attention is required for the classification of the different levels of referral and standards for staffing, equipment and facilities.

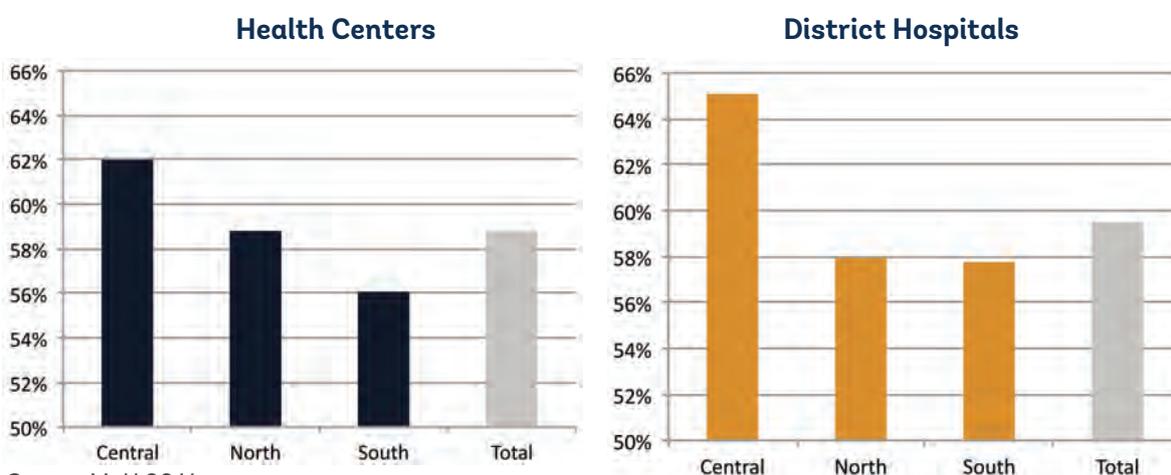
Through the Sam Sang (Three-Builds) Policy, more autonomy for staff planning and deployment has recently been given to PHDs and hospitals. While posting of staff had previously been a central responsibility, the provinces can now make an annual request for additional staff as per their identified requirement. Provincial Health Workforce Plans are now being prepared to ensure consideration of the provinces' unique context and priorities regarding local utilization of services, availability of appropriate skill mix, and productivity of health staff. MoH is yet to create positions for professional managers; program, facility, logistics, financial and data management functions remain the responsibility of medically trained staff.

A recent Capacity Building Technical Assistance (CDTA) activity, as part of the Technical Assistance Grant from the Asian Development Bank is supporting capacity building for PHDs to prepare health sector staffing plans for their province. These plans are expected to be based on health and population needs and taking both quantity and quality of health care workers into consideration.

2.4 Service Availability

In 2014, a Service Availability and Readiness Assessment (SARA) Survey was performed in Lao PDR to assess the capacity for service provision across 40 district hospitals and 80 health centers selected randomly across the country (MoH, 2014). The overall general service readiness index for Lao PDR was 59 percent—meaning that, on average, 59 percent of facilities had the required tracer items and amenities to provide basic health services to the population. Service readiness was generally found to be higher in the Central Region than in the North or South Regions and slightly higher for district hospitals than for health centers (Figure 2-6). Cross-country comparisons are difficult; however, the limited data suggests that the indexes for Lao PDR are comparable to those of other low- and middle-income countries.

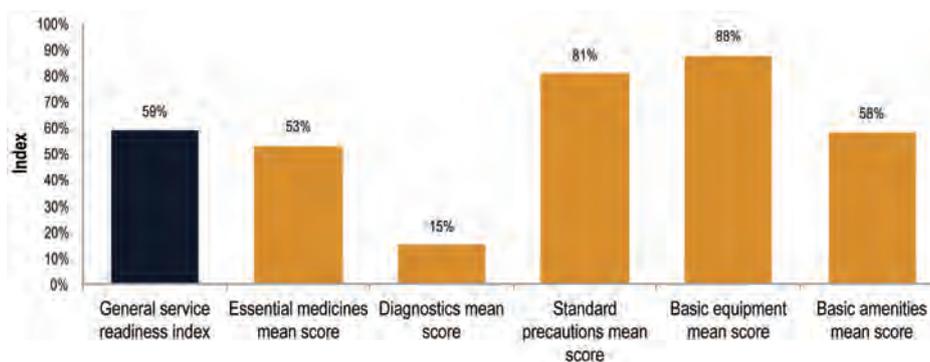
Figure 2-6: General Service Readiness Index by Region (2014)



Source: MoH 2014.

Key reasons for the lack of service availability across health facilities in Lao PDR include the lack of basic amenities, limited diagnostic capacity, and nonavailability of essential medicines (Figure 2-7).

Figure 2-7: General Service Readiness Index in Health Centers



Source: MoH 2014.

While means of emergency transport and communication equipment were available at most facilities of either type, about one-quarter of health centers and more than one-half of district hospitals had no access to a safe water supply. In addition, 60 percent of health centers and 70 percent of hospitals suffered from interruptions of power supply. Overall, only 1 percent of health centers and 5 percent of hospitals had all seven amenity items that were considered required (power, improved water source, sanitation facilities, consultation room, communication equipment, access to computer and Internet, and emergency transportation).

Service readiness of basic equipment items (scales, thermometers, stethoscopes, blood pressure apparatus, light source) and standard items for infection prevention scored relatively high in both types of facilities. On the other hand, the survey demonstrated low readiness scores on the availability of essential medicines as well as diagnostics—particularly at health center level. On average, health centers were only able to perform one of the five diagnostic tests¹⁰ considered essential (usually a pregnancy test). This means that even basic laboratory tests such as blood hemoglobin and urine blood, glucose and protein cannot be routinely performed at the health center level.



¹⁰ The five tests considered essential are: Hemoglobin, HemoCue, urine dipstick-protein, urine dipstick-glucose, and urine test for pregnancy.

While most hospitals were able to diagnose HIV, TB, Malaria, and Syphilis, only 8 percent were able to diagnose Hepatitis B or C. On average, health centers had only six of the 12 essential medicines in stock, and none of the health centers or hospitals had all essential medicines appropriate to their level in stock. Table 2-2 summarizes the findings on specific service readiness for MCH services.

Table 2-2: Service Availability and Readiness for MCH Services (%)

Type of Service	Service Availability	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Overall Readiness	All Items
Health Centers							
Family Planning	99	33	94	n.a.	48	48	0
Antenatal Care	98	46	95	6	49	48	0
Basic Obstetric Care	91	63	57	n.a.	36	66	1
Routine Child Immunization	99	79	93	n.a.	49	66	0
Child Preventive and Curative Care	98	63	77	6	60	63	0
District Hospitals							
Family Planning	100	41	93	n.a.	20	51	0
Antenatal Care	100	36	93	48	100	69	0
Basic Obstetric Care	100	30	79		52	54	0
Comprehensive Obstetric Care	100	37	41	85	54	57	0
Routine Child Immunization	100	48	98		87	77	13
Child Preventive and Curative Care	100	38	72	95	81	63	0

Source: MoH 2014.

A large part of the population in Lao PDR—primarily the poorest population groups—depends on outreach services for both preventive and basic curative care services. While outreach services were initiated in 1982 to provide immunization services, integrated outreach with provision of both immunization and general MCH services was introduced by MoH with a guideline¹¹ circulated to all provinces and districts in 2009.

A 2012 World Bank study (Jacobs et al., 2012) assessed the factors affecting delivery of MCH services during vaccination outreach in six districts of three provinces. Through 58 in-depth interviews with representatives of PHOs and DHOs, health center staff and village health volunteers, it was found that the regularity and frequency of outreach sessions and the number of integrated vaccination and MCH services varied widely between sites. Availability of external financial and technical support was the major determinant of optimal delivery of integrated services.

¹¹ In addition to immunization services, the integrated outreach was to cover: For children: weighing and measuring for nutrition status; vaccination; Vitamin A supplementation and deworming; health check-up. Maternal care: antenatal care, counseling on prevention of mother-to-child HIV transmission; postpartum examination; provision of iron-folate to pregnant and postpartum women; postpartum Vitamin A supplementation; newborn assessment. Women of reproductive age: Tetanus vaccination; family planning; health education.

It was found that the areas with the most effective outreach activities appeared to be those in which regular supportive supervision and monitoring were provided, either by DHO or PHO staff, and most noticeably, by staff of external projects or of the hydropower plant. Supervision tended to be conducted at quarterly intervals, subject to availability of funds, except for staff members of facilities supported by external agencies. Well-performing vaccination services appeared to be those benefiting from regular, intense supervision.

In an unpublished World Bank rapid field assessment (2016b), several health center staff could not define the MCH services to be provided during integrated outreach. Only a few health centers could prepare a microplan for outreach. Lack of appropriate and necessary medical tools and equipment to carry out integrated outreach was another hindrance to providing the required services. Lack of feedback, support, and clear guidance from district and provincial health officers was another, if not the key, factor impacting on integrated outreach implementation. While a Quality Supervisory Checklist was introduced by MoH in early 2016, its application has yet to generate its desired results.

A World Bank assessment (2016b) was carried out to better understand the implementation on the ground of integrated outreach. The assessment found similar variations in the quality, frequency and content of outreach activities. The incentives and financial support provided for conducting immunization and MCH services during outreach were different and differed between provinces (for more details see section 4.3.2).



2.5 Health Service Utilization

The public sector accounts for the major share of inpatient and outpatient utilization.

While utilization of health services has increased across the board over the last years, there are still significant differences across provinces and by economic status. The discrepancies are not only caused by differences in the incidence of reported illness but also—and even more so—in the care seeking behavior (Table 2-3). A proportion of the wealthier population and people living in border areas seek out better service in neighboring Vietnam or Thailand; however, there is no reliable estimate of the magnitude of cross-border health care.

Table 2-3: Outpatient Utilization of Health Services in the Past Four Weeks (by Economic Quintile) (2012–13) (%)

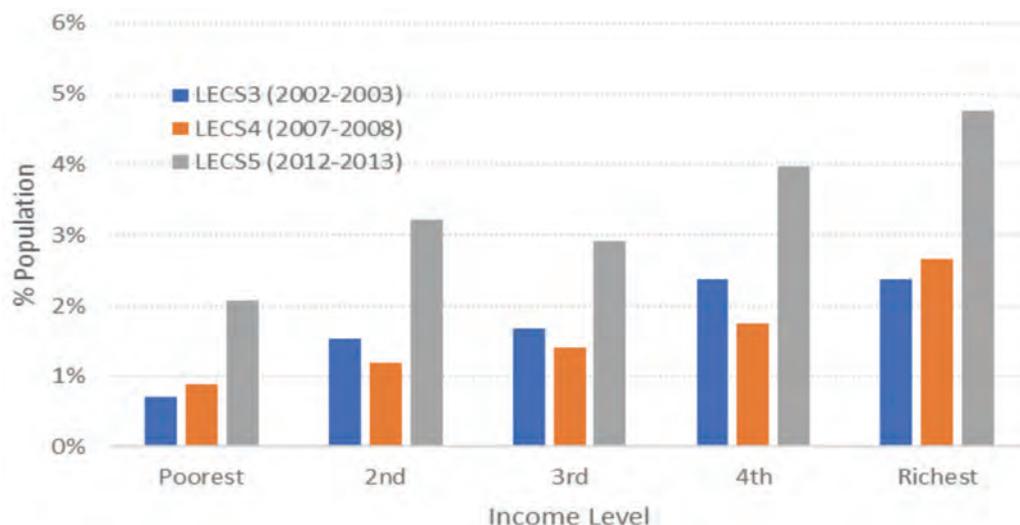
Reason for Attendance	All	Poorest	Q2	Q3	Q4	Richest
Any illness or injury	10.0	9.2	9.5	9.1	10.5	11.6
Seeking care when ill	31	24	27	29	33	39
Seeking care in public facilities when ill	25	20	23	25	27	28
Seeking care in private facilities when ill	10	5	8	8	10	18

Source: World Bank staff calculations, based on LECS5 (Lao Statistics Bureau 2014).

Provision of primary health care suffers from poor access and low acceptance. This is likely due to the significant OOP expenditure required, as well as the inadequate quality of services at public health facilities. Low bed occupancy rates and a relatively short average length of stay indicate underutilization of inpatient services, while outpatient services at hospitals are overcrowded and at health centers are underutilized. The capacity of the health workers to respond to the double burden of disease also remains limited, and addressing chronic diseases in primary care settings will require very different competencies, information systems and modalities of working.

Utilization of basic maternal health services is extremely low—in 2013, only 38 percent of births occurred at health facilities, and only 56 percent and 39 percent of pregnant women had received ANC and PNC respectively at least once. There are also huge disparities by economic status—with the share of institutional births ranging from 87 percent in the wealthiest quintile to only 11 percent in the poorest quintile. Inequality in coverage and outcomes of MCH services between the rich and poor population is clearly one of the most significant challenges facing Lao PDR. While all income groups have increased their use of outpatient services between 2002 and 2013, use by the richest income group remains more than double that of the poorest (Figure 2-8).

Figure 2-8: Proportion of Individuals Who Sought Outpatient Care (any type) in the Past Four Weeks (by income quintile) (2002–13)



Source: NSC 2004; MoPI 2009; Lao Statistics Bureau 2014.

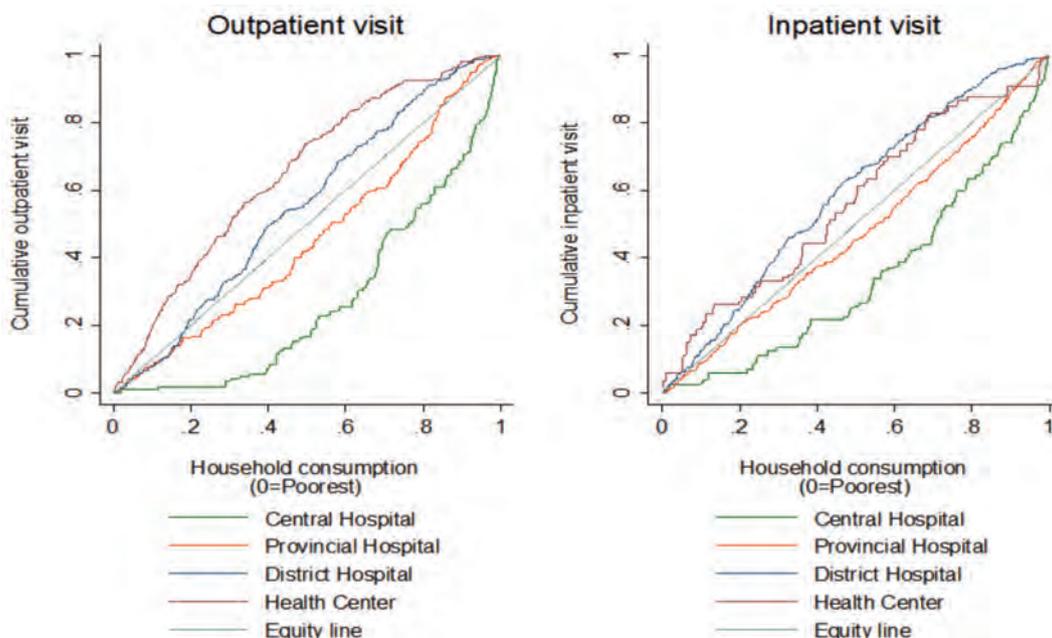
Box 2-1: Equity Differentials

Lao PDR is considered to be grappling with some of the world’s largest equity differentials with regard to coverage and outcomes of MCH services between the rich and poor population (World Bank, 2016b; Tanner et al., 2015). In 2011-12, for example, infant mortality and under-five mortality rates were four to five times higher in the provinces with the highest rates compared to the province with the lowest rates. Rates of stunting of children aged under five years were more than three times higher in the provinces with the highest rates than in the province with the lowest rate. Residents of rural areas without access to roads are found to be particularly disadvantaged. Specifically, for immunization, the coverage rate ranges from 21.1 percent in the lowest coverage province to 79.0 percent in the province with the highest coverage. Wide differences also apply to income groups where the immunization coverage for the poor is less than one-half of that of the richest income group.

The share of women in the poorest quintile who did not receive any ANC during the last pregnancy (75.2 percent) is more than 10 times higher than the share of women in the richest quintile (6.6 percent). Regarding safe delivery, institutional births range from 87 percent in the wealthiest quintile to only 11 percent in the poorest quintile. Lao PDR is considered to be one of the world’s most inequitable countries with regard to coverage and outcomes of MCH services between the rich and poor population.

Over the past decade, all income groups have increased their use of outpatient services; however, the richest income groups are the primary users of outpatient services at the higher service level (central and provincial hospitals), while the poorest income groups are the primary users of health centers. For inpatient services, the lower income groups use the health centers and district hospitals while the higher income groups primarily use provincial and central hospitals.

Concentration Curves for Health Sector Subsidies and Lorenz Curve of Household Consumption



Source: Lao Statistics Bureau 2014.

A large part of the population in Lao PDR—primarily the poorest population groups who live in the difficult to reach areas—depend on outreach services for both preventive and basic curative care. A number of studies, including the rapid field assessment carried out by the World Bank in 2016, found that there were great variations in the way outreach was conducted between and within the two provinces surveyed and that only a few health centers regularly provide the prescribed five services on a regular basis. Findings indicate that a share of the population in fact do not have access to even basic services and that, in addition to provision of financial protection for the poor, the delivery of integrated outreach services needs to be streamlined and strengthened.





Section 3

Health Financing

3.1 Overall Health Financing¹²

Lao PDR's health system has transitioned from a health system providing free health services to a system that increasingly relies on OOP payments by patients. Prior to 1990, health services were provided for free at all public health facilities in Lao PDR. Limited financing for nonwage recurrent expenditure resulted in the subsequent introduction of user fees and RDFs, with nationwide formalization of implementation of both policies in 1995. Since then various pilots and policy measures to address the challenges of limited access to health services and lack of financial protection for the poor and the vulnerable have been initiated and social health protection schemes have evolved over the past decades.

Health financing in Lao PDR is characterized by low and erratic levels of government spending on health and a correspondingly high reliance on OOP health expenditure and external assistance for health. THE as a share of GDP was low at 2.9 percent in 2014 and was US\$331 million or roughly US\$50 per capita, which is one of the lowest in the region as well as globally (Table 3-1 and Figure 3-1).

Table 3-1: Composition of Health Expenditure: Cross-Country Comparison (2014)¹³

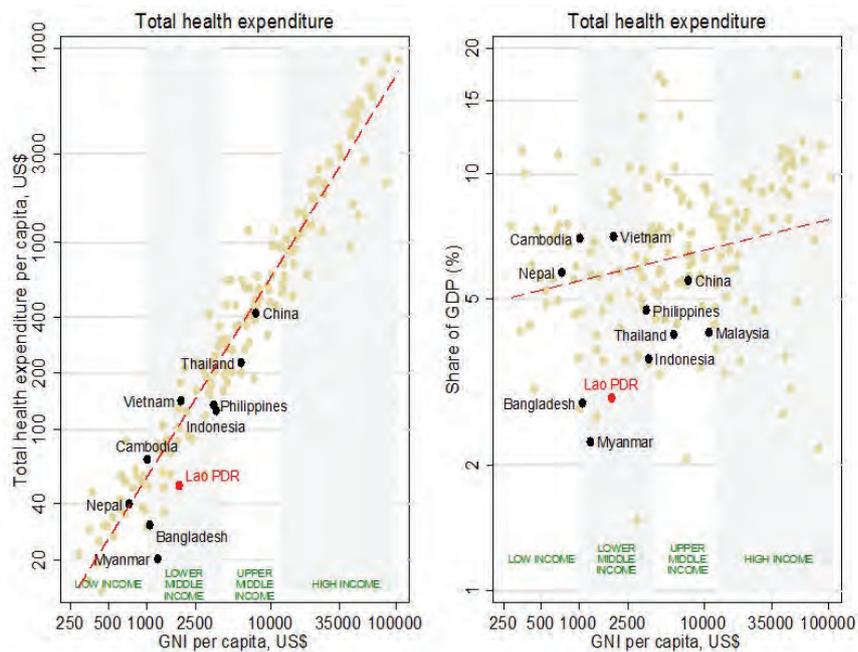
Country	GNI per capita (US\$)(2014)	THE per capita (US\$)	THE as % of GDP
Cambodia	1,020	61	5.7
Myanmar	1,200	20	2.3
Lao PDR	1,640	50	2.9
Vietnam	1,900	142	7.1
Thailand	5,810	360	6.5

Source: WHO 2017a.

¹² Health financing data in this section are based on the WHO Global Health Expenditure Database (WHO, 2017a). For Lao PDR the data for 2011 to 2016 has been augmented from the Lao NHA FY2012-2013 to 2015-2016 report. As the WHO data is currently available up to 2014 for most countries 2014 was chosen as base year for all cross-country comparisons. For government expenditure and state budget plan latest available data (2016/17) was used.

¹³ Data for Lao PDR are based on the Lao NHA FY2012-2013 to 2015-2016 report.

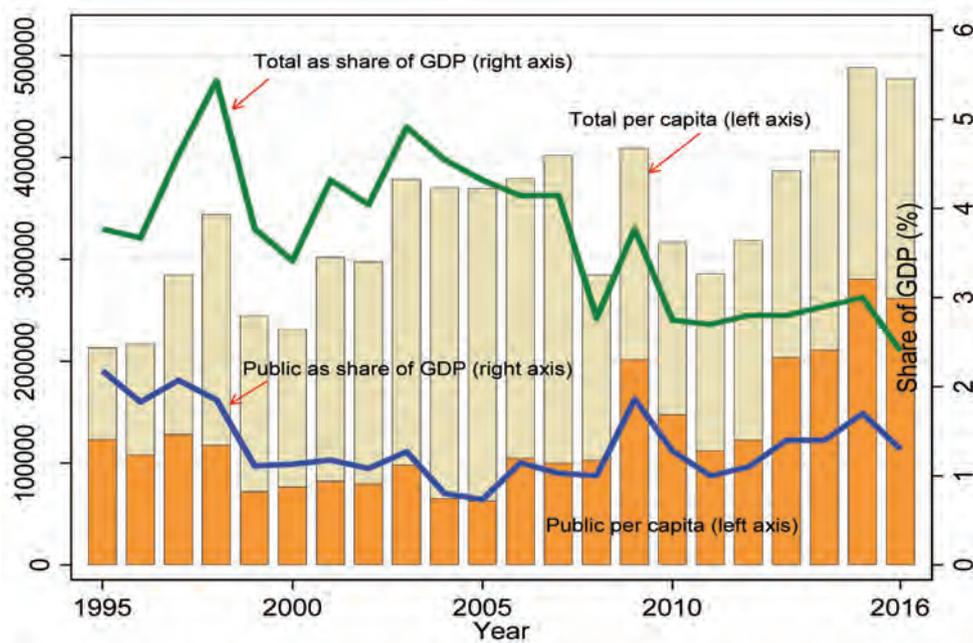
Figure 3-1: Total Expenditure on Health versus Income (2014)



Source: World Bank 2017.
 Note: Both x and y axes in log scale.

Both total and public expenditure on health as a share of GDP have witnessed an overall declining trend over the past 20 years, despite the temporary recoveries immediately after the 1997 and 2008 financial crises (Figure 3-2).

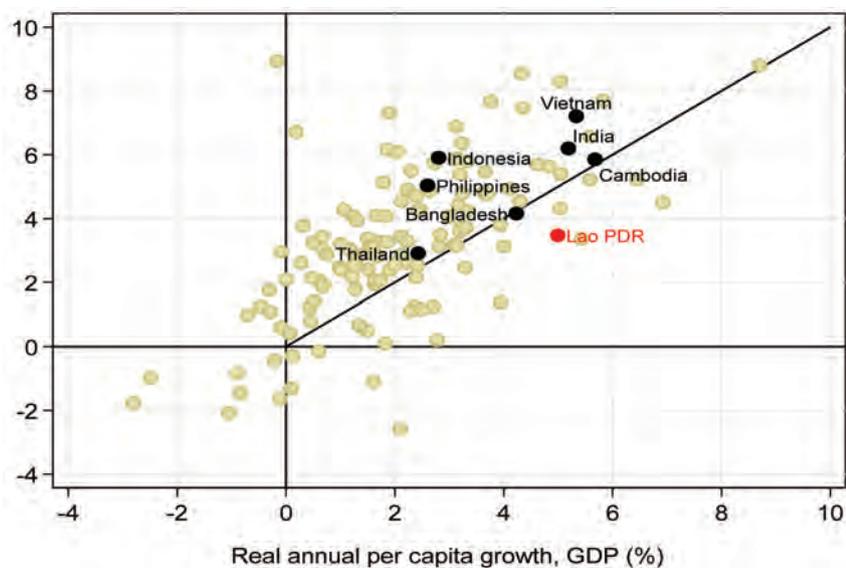
Figure 3-2: Total and Public Expenditure on Health in Lao PDR (1995–2016)



Source: World Bank 2017; WHO 2017a.
 Note: Lao PDR using NHA FY2012-2013 to 2015-2016 report, Real LAK per capita 2016 based.

Despite robust economic growth in the two decades to 2014 (above 5 percent), the growth rate for health spending has been very modest at around 1 percent. This compares unfavorably with neighboring peers where the annual per capita health expenditure growth rates are higher than the annual GDP per capita growth rates (Figure 3-3). The health expenditure as a share of GDP has declined during this period (3.3 percent in 2000, 2.9 percent in 2014 (Table 3-2)). However there has been a significant increase in the budgetary allocation for health in recent years. Based on the latest NHA data, THE for 2015 and 2016 increased over 2014.

Figure 3-3: Real GDP Growth versus Growth in Total Health Spending per Capita (2014)



Source: World Bank 2017.

Table 3-2: WHO NHA-based Key Health Financing Indicators for Lao PDR (2000–2014)¹⁴

Indicators	2000	2005	2010	2014	2015	2016
THE per capita (US\$)	10	20	30	50	59	59
Government Health Expenditure per capita (US\$)	3	3	14	25	33	30
Total Health Expenditure (% of GDP)	3.3	4.3	2.7	2.9	3.0	2.4
GDP Growth (annual %)	5.8	7.1	8.5	7.6	7.3	7.0
General Government Health Expenditure (GGHE) as % of THE	33.1	17.0	46.5	49.5	55.2	51.8
GGHE as % of GDP	1.1	0.7	1.0	1.4	1.7	1.3
GGHE as % of General Government Expenditure	5.2	4.1	5.2	4.6	6.3	5.9
Social Security Funds as % of GGHE	1.3	6.9	5.5	3.3	2.9	4.4
Private Expenditure on Health (PvtHE) as % of THE	66.9	83.0	53.5	50.5	44.8	48.2
OOP Health Expenditure (% of THE)	61.4	62.4	41.8	48.0	42.3	45.1
External Resources on Health as % of THE	30.0	16.7	28.7	15.8	19.0	17.7

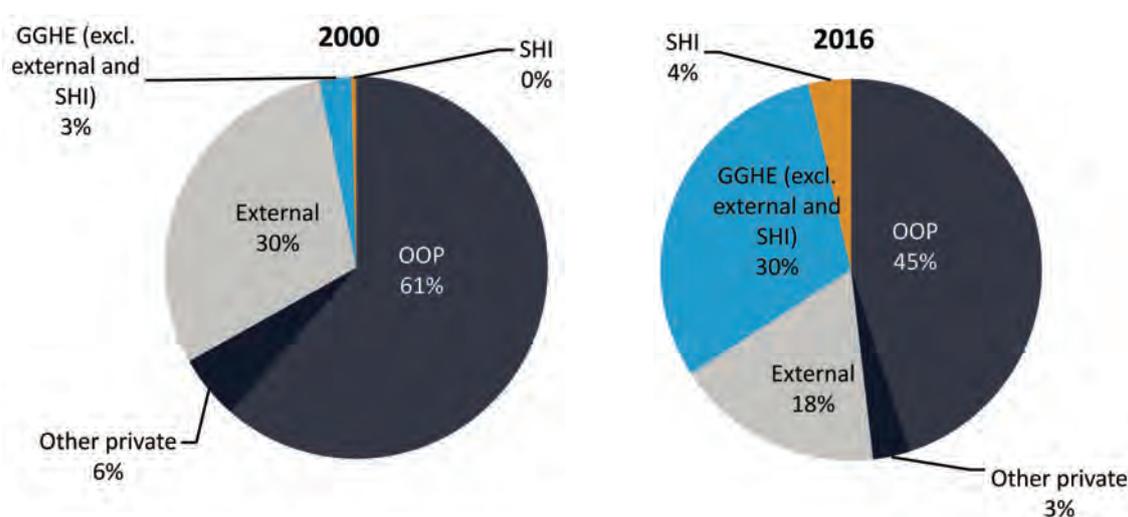
Source: WHO 2017a; World Bank 2017.

Note: NHA: National Health Accounts.

¹⁴ Data for 2014–16 (except for GDP growth) are based on the Lao NHA FY2012–2013 to 2015–2016 report.

Financing for Health in Lao PDR comes primarily from four main sources: (i) government budgetary sources; (ii) social health insurance (SHI); (iii) OOP payment from households; and (iv) external sources. The composition of health expenditures has changed, although OOP spending has remained the largest source of financing for health in Lao PDR in 2016 (Figure 3-4). The latest NHA estimates indicate that nearly one-half of THE (48.2 percent) is financed by private spending. This includes OOP spending by households which is 45.1 percent of THE, financing channeled through NGOs as well as a small share of private insurance. Government health expenditure—which includes external financing—was 51.8 percent (the share of external financing was 17.7 percent of THE). The contribution from SHI was 3.6 percent of THE in 2016.

Figure 3-4: Composition of Health Expenditures by Agent (% of THE) (2000 and 2016)

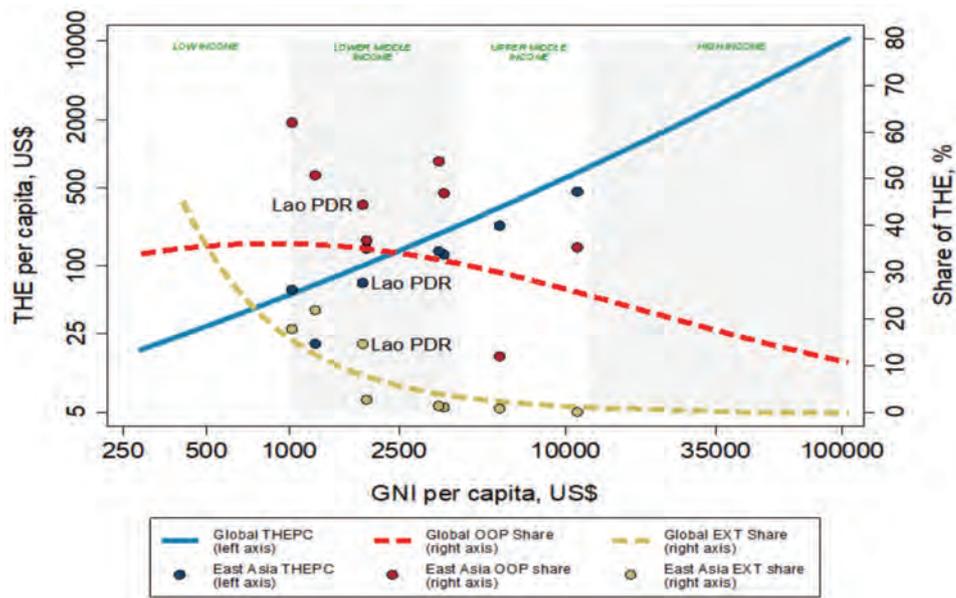


Source: WHO 2017a.

In parallel with the demographic, epidemiological, and nutrition-related transition, countries also experience a “health-financing transition” or an increase in the level of THE accompanied by a rise in the prepaid or pooled share of THE as they shift from low-income to lower- and upper-middle-income status. During this shift in income status, the broader health financing transition is also accompanied by another important transition: the rapid decline of external financing for priority health programs such as HIV, TB, Malaria and immunization from bilateral and multilateral sources. This health financing transition does not follow the same pattern in every country, as many factors can shape the timing and magnitude of the transition.

Although some indicators fluctuate widely, there is some evidence for an appropriate, albeit slow, health financing transition in Lao PDR. There has been a consistent increase in health expenditure per capita, a decrease in OOP expenditure on health as a share of THE, and a rising share of financing from pooled sources. As the country’s economy is projected to grow rapidly with the expected decline of external financing, this transition is expected to figure more prominently in coming years (Figure 3-5).

Figure 3-5: Health Financing Transition in Lao PDR - THE versus Income (2014)



Source: World Bank 2017; WHO 2017a.

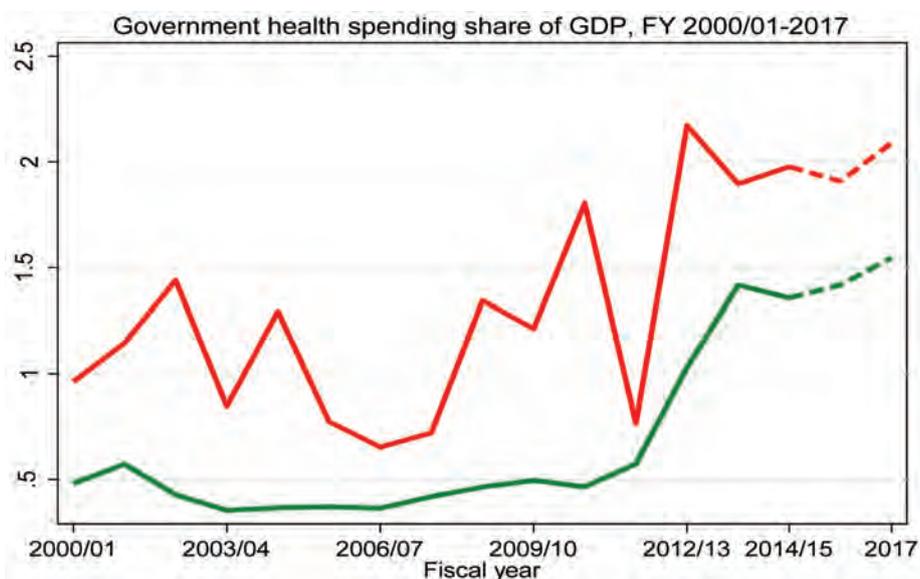
Note: (i) Both x and y axes in log scale. (ii) THEPC: THE per capita (THEPC); EXT: External.



3.2 Government Budgetary Spending

Government expenditure on health as a share of GDP has been erratic over time due to dependence on external financing, while domestically financed health spending stagnated at the very low level of less than 0.5 percent as a share of GDP between 2000 and 2010. In recent years, however, budgetary government spending on health has increased to nearly 2 percent of GDP, albeit from a very low level of less than 1 percent of GDP before fiscal year 2011-12 (Figure 3-6).

Figure 3-6: Government Health Spending as a Share of GDP (FY 2000-01 to FY 2017)¹⁵



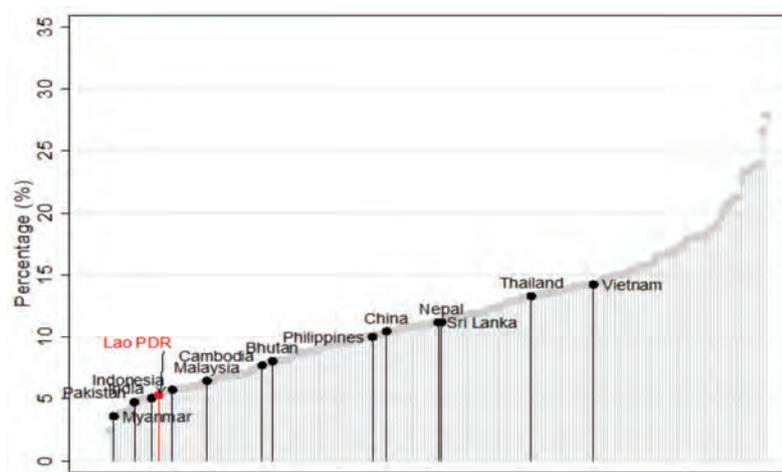
Source: Official Gazette, State Budget Plan (various years) & MoH.

Note: Actual 2000/01-2013/14; 2014/15-2015/16 Planned; 2017 (Unofficial data from MoH).

Health's share of the national (that is, combined central and local) budget is relatively low in Lao PDR. The 2014 WHO data indicate that Lao PDR's prioritization for health is low in regional and global comparisons. Several countries—including neighboring Cambodia and Vietnam—devote a much larger share of the budget to health. According to Lao PDR's State Budget Plan for FY2015-16, health's share of the national budget is 6 percent, lower than the shares of education and sports (12 percent) and public works and transportation (also 12 percent). Combining a relatively low overall share of government spending as a share of GDP with a relatively low priority accorded to health is one reason why the health expenditure share of GDP is one of the lowest in the region and globally (Figure 3-7).

¹⁵ It should be noted that the reported data on government health expenditure in the WHO Global Health Expenditure Database varies from the official expenditure data reported in the Government's Official Gazettes and Budget Plans. This is partly due to the different government fiscal and calendar years and methodology used. The government's fiscal year has been adjusted to calendar year from 2017. For international comparison and presentation of health expenditure data (from public, private, domestic and external sources), the latest data available from the WHO database is used unless indicated otherwise.

Figure 3-7: Health's Share of National Budget (2014)



Source: WHO 2017a.

Health represents (2015-16) a smaller share in both central and provincial government expenditures compared to other sectors. Education constituted the largest share of provincial expenditures (accounting for more than one-quarter of spending) while public works and transportation (18 percent) represented the greatest share of central expenditures (Table 3-3).

Table 3-3: Central and Provincial Government Expenditures (FY 2015-16)

Expenditure Category	Central		Provincial	
	LAK billions	Share (%)	LAK billions	Share (%)
Education and sports	1,204	9	2,571	26
Public works and transportation	2,363	18	1,330	13
Health	1,063	8	854	9
Finance	808	6	283	3
Labour and social welfare	868	7	54	1
Other	6,824	52	4,914	49
<i>Total</i>	<i>13,130</i>	<i>100</i>	<i>10,007</i>	<i>100</i>

Source: State Budget Plan FY2015/16.

Note: Differences in totals are due to rounding.

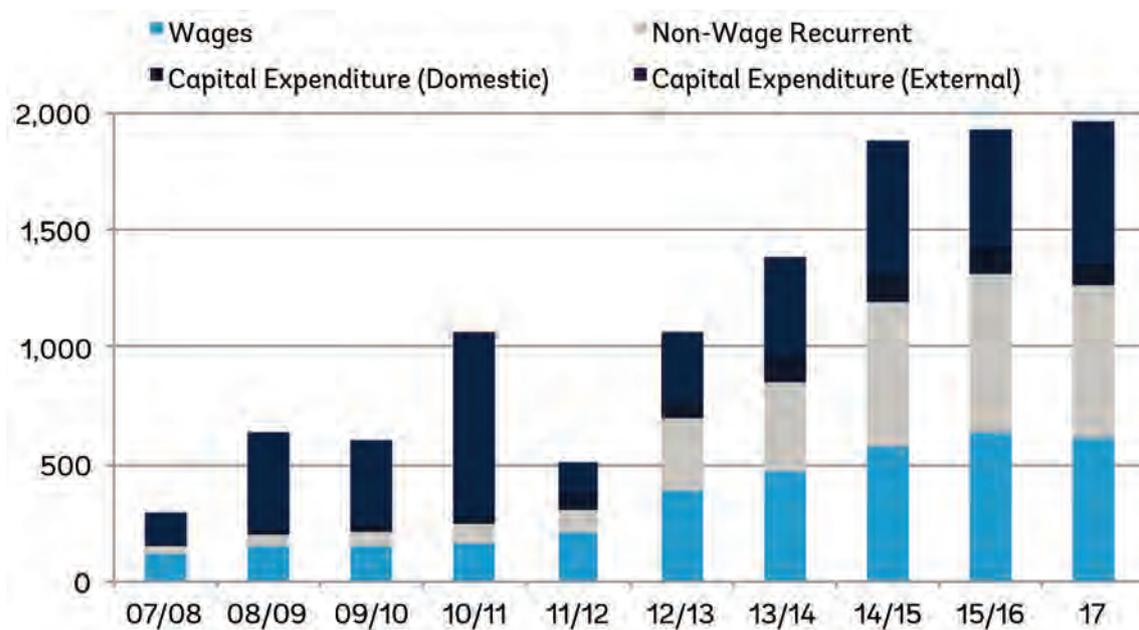
Based on data in the Official Gazette,¹⁶ government budgetary expenditure on health at central and provincial levels was LAK 1,911 billion in FY2014-15 (Figure 3-8). This includes both recurrent and capital (domestic and externally financed) expenditures, but excludes the health spending from other ministries and the National Social Security Fund. It also includes technical revenues at health facilities as well as the revenues from the Nam Theun 2 hydropower project.

¹⁶ The latest available Official Gazette is FY2014-15.

Since its inclusion in the Seventh Socioeconomic Development Plan 2011–15, a modest portion of revenues from the Nam Theun 2 hydropower project has been allocated to eligible health programs. These programs include the FMNCH program and the Health Equity Fund (HEF) targeted for the poor. If only domestically financed government expenditure is considered, (excluding the externally financed capital expenditure), the government expenditure on health is LAK 1,311 billion in the same year.

GoL has committed to increase government health expenditure to 9 percent of general government expenditure by 2015 as endorsed by the National Assembly. The State Budget Plan for FY2015-16 indicates that the government expenditure on health, including externally financed capital expenditure, was estimated at LAK 1,934 billion (or LAK 1,442 billion when external financing is excluded)—a near doubling of health expenditure from FY2013-14.¹⁷ A significant increase in health budget is planned for FY2017 (Figure 3-8) with the approved budget allocating LAK 180 billion (about US\$ 22 million at current exchange rates that is outside of the approved health budget for FY2017) to fund the cost of the National Health Insurance Scheme.

Figure 3-8: Government Health Expenditure by Function (FY2007-08 to FY2017)
(in billion LAK)



Source: GoL Official Gazette and State Budget Plan, various years.

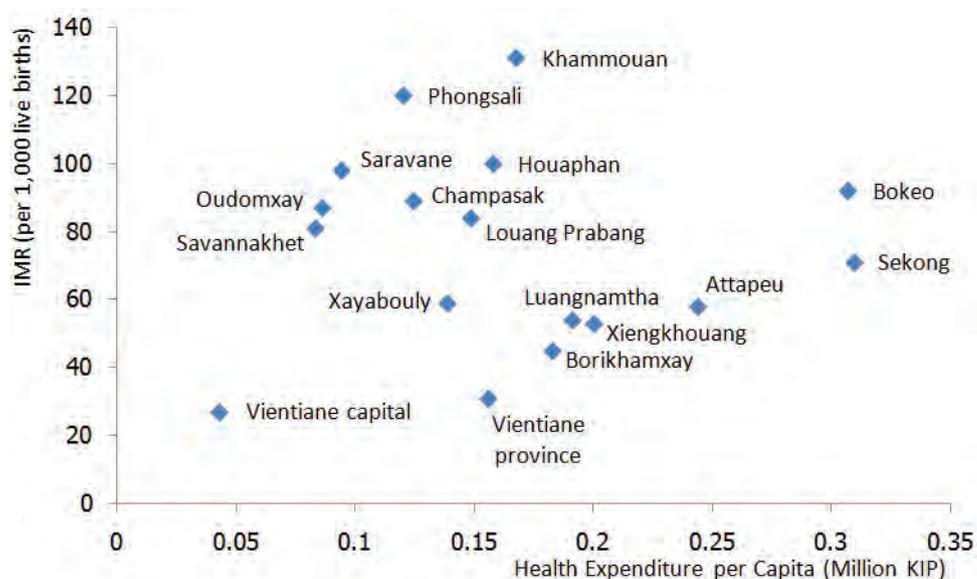
Note: Data on FY2015-16 are based on the State Budget Plan and the Public Investment Plan; data on FY2017 is from the State Budget Plan and the unofficial data from MoH.

¹⁷ The government health expenditures in the Official Gazette and NHA are reported differently. The government health expenditures in the Official Gazette include expenditures from external sources and technical revenues, while the government health expenditures in NHA includes expenditures from external sources and social health insurance but exclude technical revenues.

According to the latest data from MoH, the approved expenditure for the health sector is estimated at LAK 2,466 billion (or LAK 335,000—about US\$40 per capita) for FY2017 to reach the 9 percent target. This 9 percent target, however, includes both technical revenue from households' OOP payments and external financing which will make accountability for the target unclear.

At the provincial level, there is a large variation in spending on health. Provincial health spending per capita is LAK 167,000 in FY2015-16, ranging from LAK 43,000 per capita to LAK 310,000 per capita. Provinces such as Phongsaly and Khammouan that have allocated much less provincial budget on health face higher infant mortality rates compared to Bokeo and Sekong with more than LAK 300,000 per capita health spending with slightly better health outcomes. The ability and willingness of local governments to budget health expenditures effectively is hampered by the fact that recurrent budgets are primarily assigned according to the number of staff, that non-human resource funds are relatively limited and are assigned primarily based on historical allocations, and that additional financing (from RDFs, collection of user fees, or external funding) is not fully reflected in annual planning (Figure 3-9).

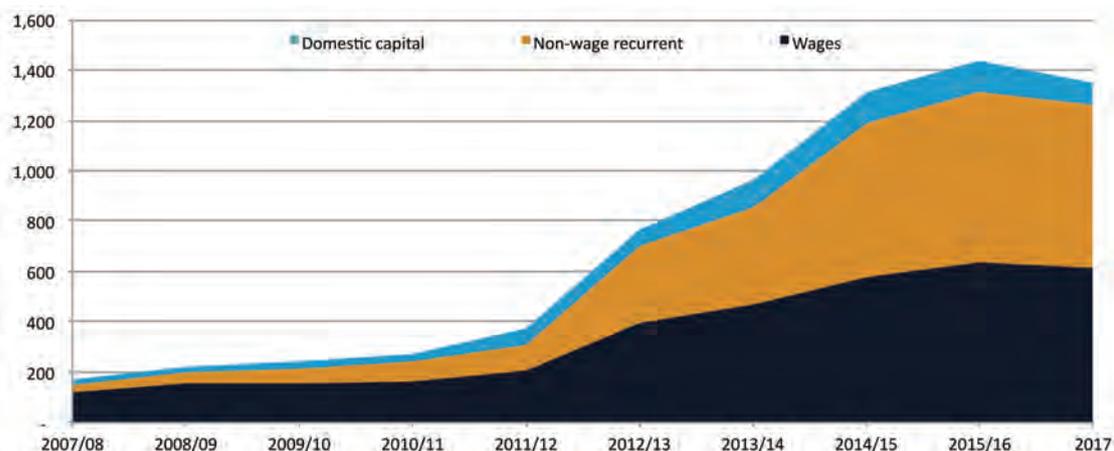
Figure 3-9: Provincial Health Expenditure per Capita (FY 2015-16) (including technical revenue and external resources for health) versus IMR



Sources: GoL FY2015-16 State Budget Plan (for provincial health expenditure), Lao Statistics Bureau 2015 (for population), MoH and Lao Statistics Bureau 2012 (for IMR).

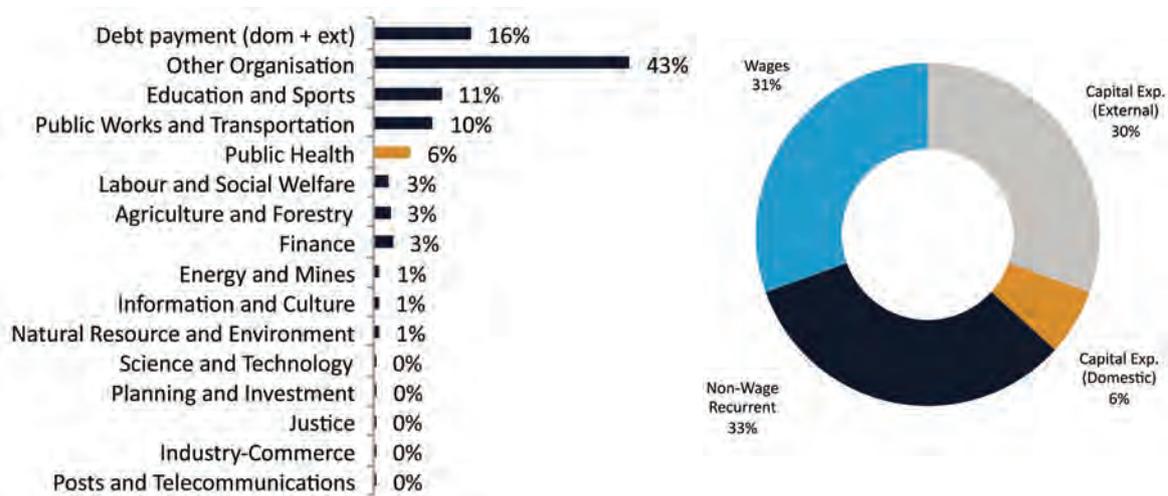
In the past, most government health spending in Lao PDR has been allocated to capital expenditure and wages, leaving little room for critical nonwage recurrent spending in an already tight resource environment. In fiscal year 2007-08, more than 70 percent of the government health expenditure went to wage-related recurrent expenditure (Figure 3-10). Only 17 percent was available for nonwage recurrent expenditure, including purchasing critical health-related commodities and financing operational plans. There has, however, been a measurable increase in the share of nonwage recurrent expenditures since 2012. In fiscal year 2017, the share of nonwage recurrent expenditures has increased to 48 percent of the total government health expenditures (Figure 3-11).

Figure 3-10: Domestically-Financed Government Health Spending Trends (FY 2007-08 to FY 2017)



Source: Official Gazette, and State Budget Plan, various years.

Figure 3-11: Government Health Spending by Sector and Government Health Spending by Expenditure Category (FY2014/15)



Source: Official Gazette.

While the local spending share of government’s recurrent and total domestically financed spending has remained at around 60 percent, local wage spending share increased slightly, from 74 percent in fiscal year 2012-13 to 79 percent in fiscal year 2017, according to the State Budget Plan. Meanwhile, local nonwage health spending has remained at less than one-half of total government nonwage spending on health (Figures 3-12 and 3-13).

Figure 3-12: Share of Local Spending in Total Government Spending for Health (FY 2012-13 to FY 2017)

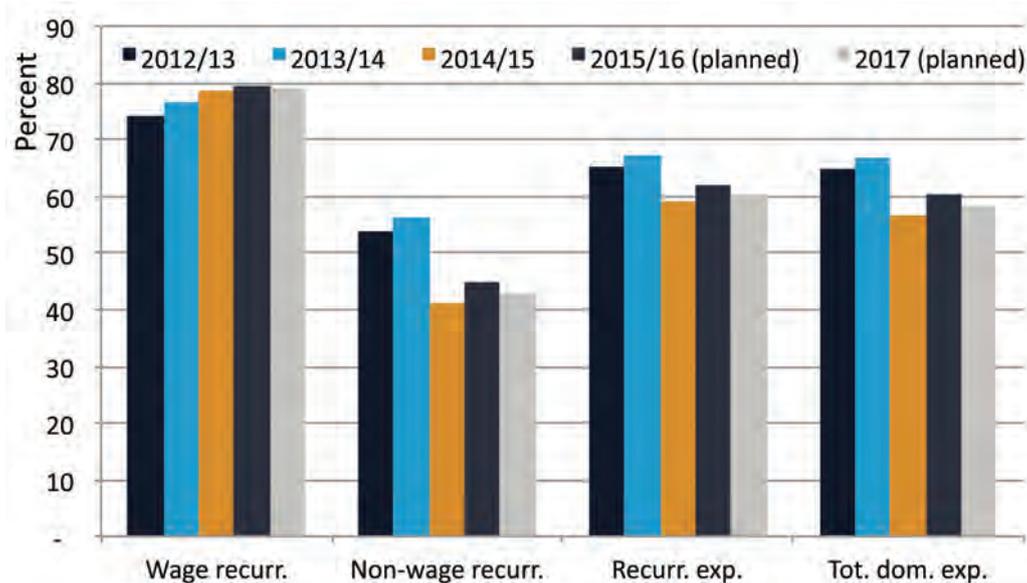
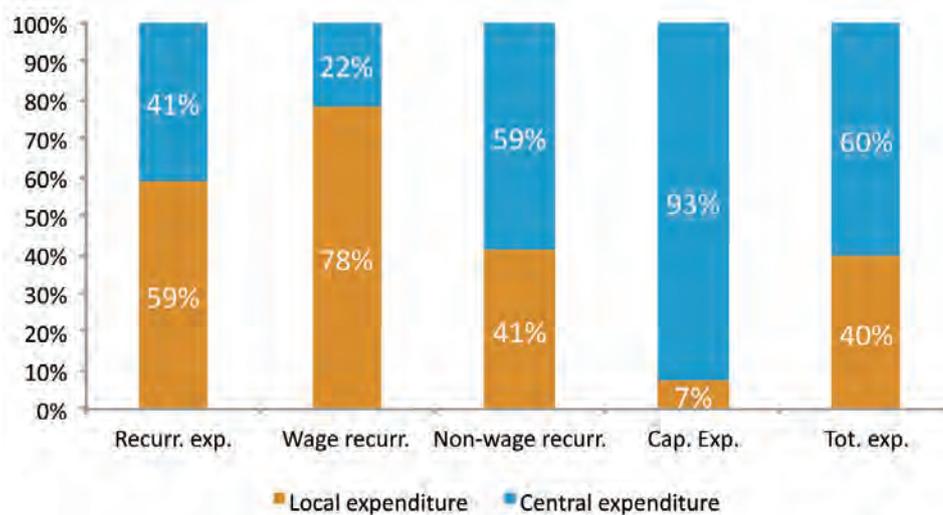


Figure 3-13: Central/Provincial Allocation of Government Budget for Health (FY 2014-15) (actual)



Source: Official Gazette and State Budget Plan, various years.

Note: Wage expenditures include wages, salaries, compensation and benefits. Non-wage expenditures include operation, maintenance, subsidies and transfers.

Local spending includes spending at provincial and district levels.

3.3 Social Health Insurance (SHI)

SHI expenditures account for a small share of THE in Lao PDR. In 2016, SHI expenditures, primarily from formal sector schemes, were LAK 72,351 million, which corresponds to only 4.4 percent of GGHE. The share of SHI expenditures is expected to increase in coming years because of the government decision to launch the National Health Insurance (NHI) scheme in 2016 and expand to nationwide coverage by 2018. NHI targets the entire informal sector population through integration of three schemes, namely, Health Equity Fund (HEF), Community-based Health Insurance (CBHI), and FMNCH and has started to quickly roll out to 15 provinces in 2017 and expected to cover all provinces by 2018. There are, however, still multiple schemes operating in many provinces during this transition period.

As of 2017, there are six health protection schemes (Table 3-4):

- (1) National Social Security Fund - the State Authority for Social Security (NSSF-SASS) for civil servants (mandatory);
- (2) National Social Security Fund - the Social Security Organization (NSSF-SSO) for private employees in the formal sector (mandatory);
- (3) CBHI for nonpoor workers in the informal sector (voluntary);
- (4) HEF for the poor (noncontributory);
- (5) FMNCH Program; and
- (6) NHI for all informal sector workers (noncontributory).

Table 3-4: Social Health Protection Schemes in Lao PDR

Aspect	NSSF-SASS	NSSF-SSO	CBHI	HEF	FMNCH	NHI
Established	1995 (Revised 2006)	2001	2002 (pilot) 2006 extension	2004	~2010	2016
Legislation	PM Decree	PM Decree	MoH National Regulations	MoH Guidelines & Regulations	MoH Guidelines	MoH Guideline
Source of Funds	Government and government employee	Employer and employee	Household (Government subsidies since 2016)	Subsidies (Government and donors)	Donor Government	Household plus government subsidies
Target Population	Government employees and dependents	Enterprise employees and dependents*	Informal sector households	Poor households	Pregnancy and under-five children	Informal sector households
Supervising Authority	MoLSW**	MoLSW	MoH	MoH	MoH	MoH



Benefit Package***	Consultation & admissions incl. surgeries	Consultation & admissions incl. surgeries	Consultation & admissions incl. surgeries; traffic accidents	Consultation & admissions incl. surgeries; food/transport for admissions; referrals	Delivery and other related outpatient and inpatient services for under-fives; food/transport/incentives	Consultation & admissions incl. surgeries; transport for admissions; referrals
Provider Payment Mechanisms†	Capitation	Capitation	Capitation OPD Case-based IPD	Capitation OPD Case-based IPD	Free MAT: Case-based; Free CU5: Capitation OPD Case-based IPD	Capitation OPD Case-based IPD
	Risk-adjusted capitation for chronic disease; cost sharing for high cost	Risk-adjusted capitation for chronic disease; cost sharing for high cost	Case-based payment for Health Centers	Capitation for low level; case-based for higher level; fee for services for 3rd referral	Free CU5: Capitation for low level; case-based for higher level	Capitation for low level; case-based for higher level

Source: MoH 2017b.

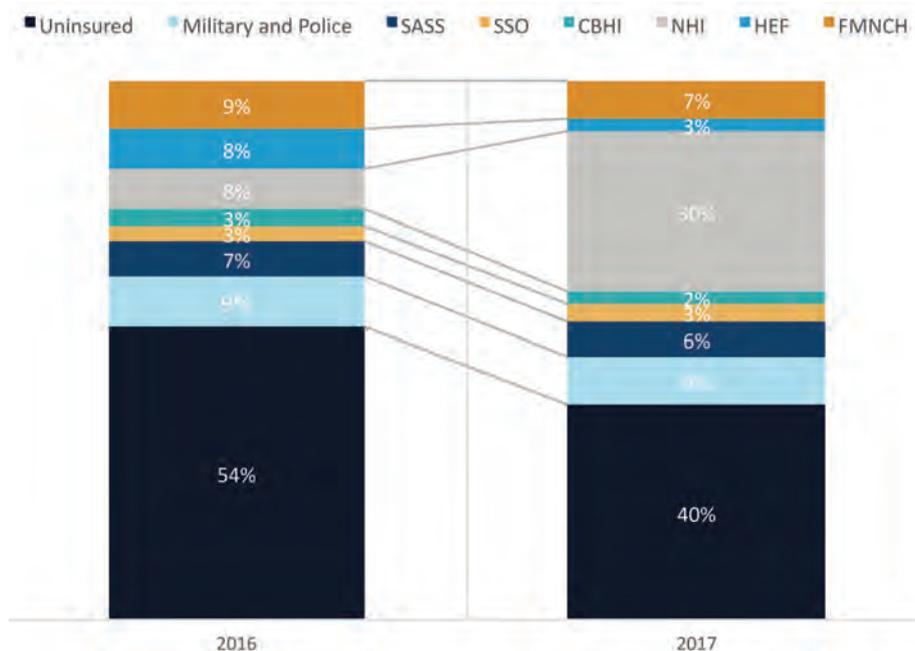
Notes: *Since 2015 also targets informal sector on voluntary basis. **Ministry of Labour and Social Welfare. *** All schemes exclude individual requests, care in private facilities, and services already paid for, for example by vertical programs. † OPD = outpatient services, IPD = inpatient services, Free MAT = Free Maternity, Free CU5 = Free Health Services for Children Under Five.

Despite the rapid expansion of social health protection schemes in Lao PDR, they remain fragmented and, in addition to creating confusion in health facilities and beneficiaries around eligibility and coverage, they also duplicate administrative infrastructure. After 15 years of implementation of CBHI since 2002, including the pilot phase, the coverage among target population for those who are in the nonpoor informal sector has been stagnant at a very low level around 3 to 5 percent of the target population.

While CBHI has contributed to, and made a positive impact in terms of reducing OOPs and increasing health service utilization among users, the scheme in the current context of Lao PDR is not seen as a viable option for expanding coverage among this large segment of uncovered population. To tackle these challenges, GoL launched an ambitious NHI scheme that is tax-based for the whole informal sector in 2016. With this noncontributory system with very low copayment when using health services and exemption for mothers, under-five children and the poor, MoH hopes to rapidly increase SHI coverage to reach the target of 80 percent by 2020 (Figure 3-14).

The challenge for the NHI will be to include measures to incorporate all the schemes that ensure essential services for the poor, pregnant women and children under five under one system with common administrative and management procedures.

Figure 3-14: Population Coverage by SHI Scheme, 2016-17



Source: MoH 2017b.

Box 3-1: Health Equity Fund (HEF)

HEF was the first official safety net for the poor, providing an effective cash transfer at the household level. The objective of HEF is the provision of free health care for the poor via exemption from user fees. HEF targets individuals “based on the list of poor families that the Steering Committee for Rural Development and Poverty Eradication, the Prime Minister Office and the Ministry of Planning and Investment have surveyed periodically in each village countrywide” (Decree on The Management of Health Equity Fund, 2010).

A first pilot project was set up in 2003 by the Lao Red Cross in Nambak district, followed by schemes initiated in Vientiane province, Sepone district and Vang Vieng district in 2005. In the following years, HEFs expanded with the assistance of development partners, especially World Bank, ADB and the Swiss Red Cross. In the absence of national guidelines these schemes, largely funded by donors, developed their own operational guidelines and management approaches, resulting in different regulations with many commonalities, but also differences—mainly in targeting, management, and payment mechanisms.

HEF offers a comprehensive benefit package to its members through public health facilities. HEF benefits package covers curative and preventive health care costs of the eligible poor, including the cost of provincial and district hospital inpatient and outpatient care, health care services provided by health centers, and services of village health volunteers. These direct costs include the costs of services provided (curative and preventive) for consultations, drugs, laboratory tests, medical consumables, other consumable supplies, room fees, and administrative costs of

processing HEF patients. HEF members are also eligible for nonmedical benefits that include food and transportation allowances and free referrals for an admission, and maternity waiting home services for mothers from a poor family to adequately compensate indirect costs that may arise when accessing health care services.

Payment is based on a capitation and/or a fixed fee (case-based) model with generally no copayment by the patient. At the facility level, financing from government budgetary sources is limited and the health facilities are dependent on financing from their own revenue—mostly from selling drugs.

After the introduction of HEFs in the World Bank Health Services Improvement Project (HSIP), there was a gradual year-to-year increase in institutional deliveries in the nine project districts. Between 2008 (before HEF) and 2015, HEF and FMNCH initiatives boosted institutional deliveries threefold. The increase was, however, mostly among the near poor and nonpoor as seen by the very substantial increase after FMNCH was added. When the scheme benefitted only the poor, the increase in institutional deliveries was only twofold. Based on these findings, it is concluded that deliveries occurring in health facilities increased substantially as well as reduced OOP payment through the two SHI schemes but that poor women may have benefitted less than the nonpoor.

Under the decree 470 P/M, the integration of HEF and FMNCH programs (possibly including family planning) under the unified scheme of NHI is currently underway. The geographic coverage of the NHI Scheme is expanding rapidly: from six provinces in December 2016, it is expected to cover 15 out of Lao PDR's 18 provinces by the end of 2017 and all 18 provinces in 2018.

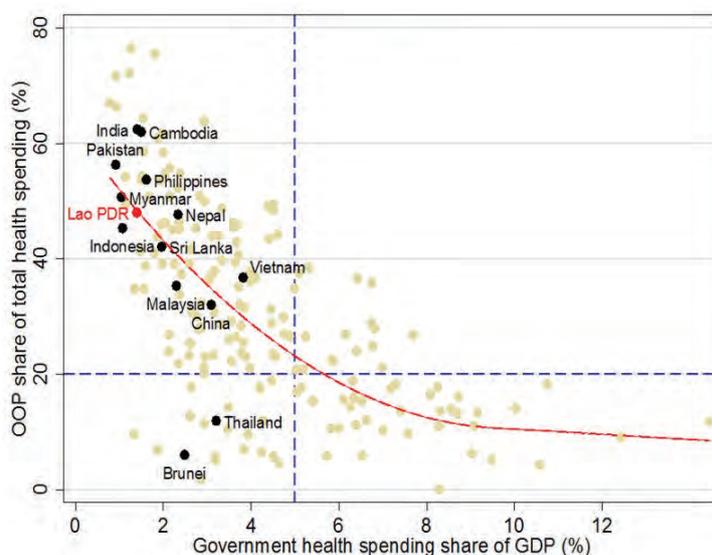
Source: World Bank (forthcoming).



3.4 OOP Spending for Health

From a health financing perspective, Lao PDR is characterized by high dependency on OOP spending and low government spending on health (Figure 3-15). Despite the significant decline of OOP as a share of THE from more than 60 percent in 2000 to 45 percent in 2016, OOP payments remain the largest source of financing for health in the country. The high levels of OOP spending deter health service utilization by the poor and reduce the potential redistributive capacity of the health financing system.

Figure 3-15: OOP Share of THE (2014)



Source: World Bank 2017.

The heavy reliance on OOP spending results in considerable financial barriers to access health services. At a threshold of 10 percent or more of total household consumption, 4.6 percent of households incurred catastrophic health spending in 2012-13 (up from 3.7 percent in 2007-08), and 1.2 percent of households had to spend more than 25 percent of their total consumption on health (Table 3-5).

Table 3-5: Incidence and Intensity of Catastrophic Health Care Spending at Different Thresholds (2003–13)¹⁸

Incidence	Catastrophic threshold as a share of total household consumption (%)			
	5	10	15	25
Incidence (2002-03)	9.9	4.0	2.3	0.3
Incidence (2007-08)	8.4	3.7	2.1	0.7
Incidence (2012-13)	9.4	4.6	2.7	1.2

Source: Lao Statistics Bureau 2014.

¹⁸ Lao Statistics Bureau 2014; World Bank staff calculations; Figures for 2002-03 and 2007-08 are from Powell-Jackson and Lindelow 2010.

There are socioeconomic, regional, and urban-rural variations in financial protection, which likely reflect the inequitable utilization and access of households to health services. For example, households living in urban areas spend, on average, 2.3 percent of their total consumption on health services compared with 1.7 percent in rural areas; and about 6.6 percent of urban households incur catastrophic health spending compared to 4.6 percent in rural areas. Ironically, due to inequitable utilization and access to health services, the poorest quintile of households has a much lower incidence of catastrophic health expenditure (1.1 percent) compared to the richest quintile (9.5 percent).

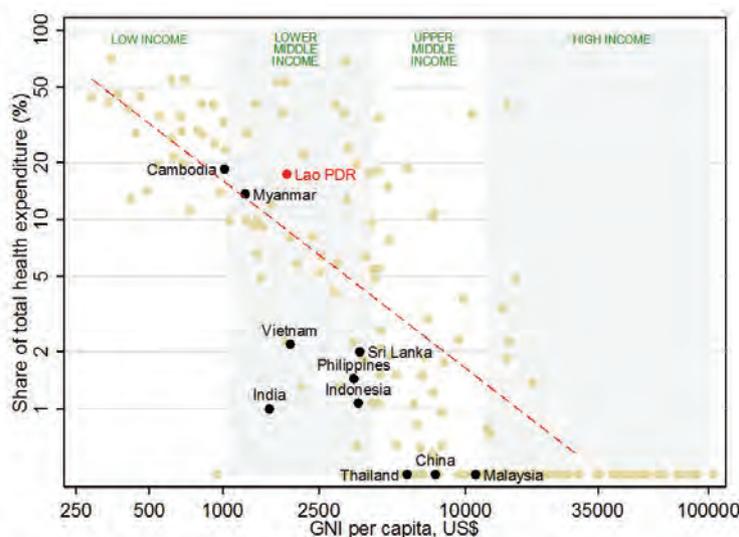
Some progress has been made and efforts are ongoing to improve financial protection and address the challenges of high OOP payments for health. In 2013, an FMNCH program (consisting of ANC, PNC and institutional deliveries, and well-baby clinic examination, including inpatient and outpatient services for children under five years) was rolled out, initially in poor districts and then expanded to 142 districts across all provinces. The free MCH policy provides fixed-fee reimbursement to health facilities depending on the type of service and the location of service provision.



3.5 External Financing

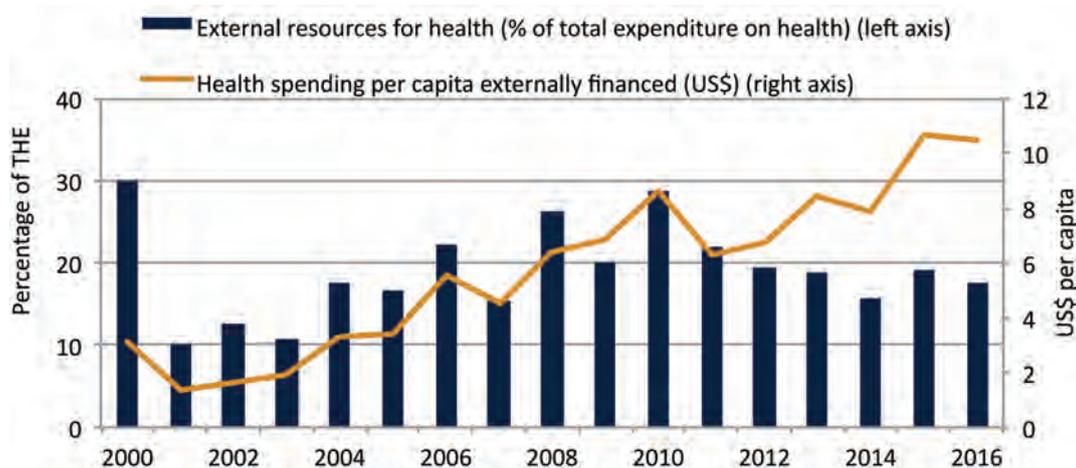
The level of dependency for health spending from external sources is higher than expected for the income level of the country and higher than in neighboring countries like Cambodia or Vietnam (Figure 3-16). While the share of externally financed health spending in Lao PDR has been steadily increasing in the first decade of the century, it appears to have leveled off between 15 and 18 percent of total health spending in recent years (Figure 3-17). Externally financed health spending per capita has increased from US\$3.13 in 2000 to US\$10.35 in 2016.

Figure 3-16: External Share of THE (2014)



Source: World Bank 2017.
 Note: Both x and y axes in log scale.

Figure 3-17: External Resources for Health (2000-16)¹⁹



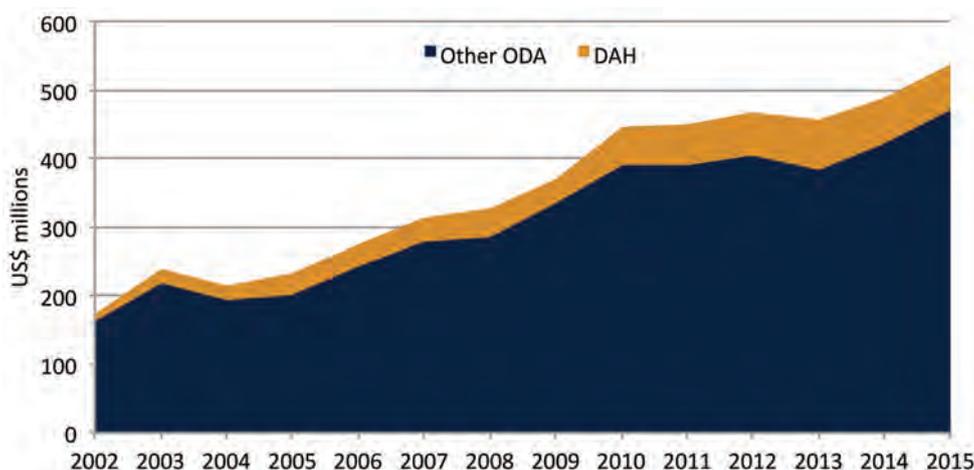
Source: World Bank 2017.

¹⁹ Data for 2011-16 are based on the NHA FY 2012-2013 to 2015-2016 report.

Data from the OECD Creditor Reporting System database on official development assistance (ODA) confirm this trend. While other development assistance has increased about three times between 2002 and 2015, development assistance for health (DAH) has increased almost sevenfold over the same period. The share of DAH in ODA has increased from around 6 percent in 2002 to 13 percent in 2015 (Figure 3-18).

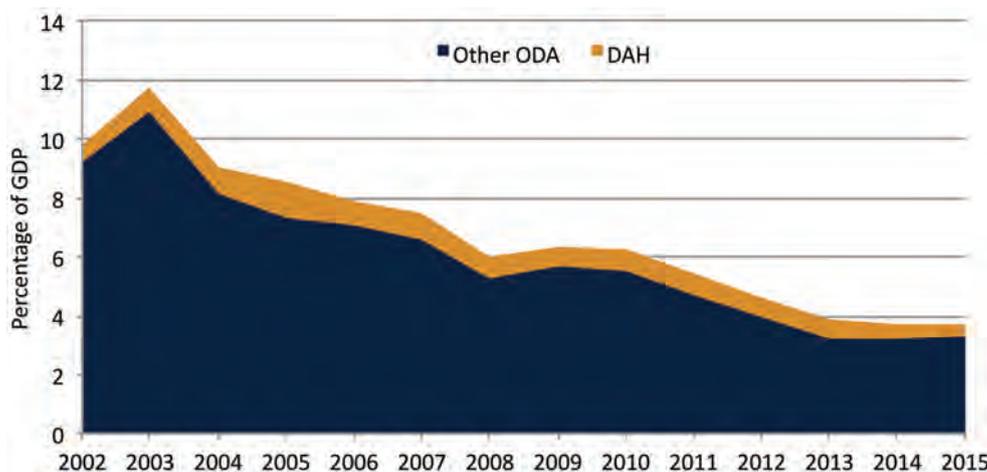
The share of total ODA in GDP has decreased quite consistently to around 3.7 percent in 2015, and the share of DAH in GDP has decreased at a much slower rate (Figure 3-19). These trends are also reflected in a disproportionate rise of DAH per capita compared to other ODA per capita (Figure 3-20). While other ODA increased a little less than 2.5 times between 2002 and 2015 (from US\$29 to US\$69) DAH per capita rose more than fivefold (from US\$1.82 to US\$9.96). The substantial increase of domestically financed health expenditure in recent years has, however, led to a decrease in the share of DAH in GGHE from a peak of 165 percent in 2005 to around 53 percent in 2014 (Figure 3-21).

Figure 3-18: Total ODA and DAH (2002–15) (US\$ million)



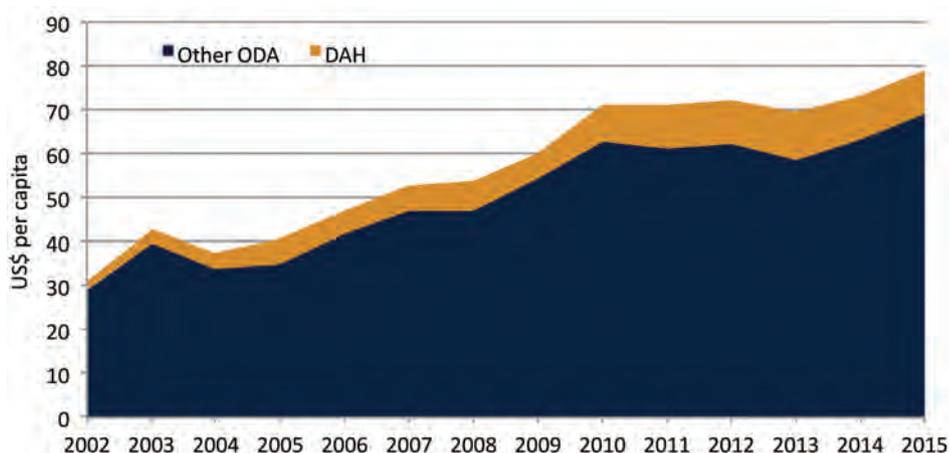
Source: OECD 2017.

Figure 3-19: Total ODA and DAH (2002–15) (Share of GDP, %)



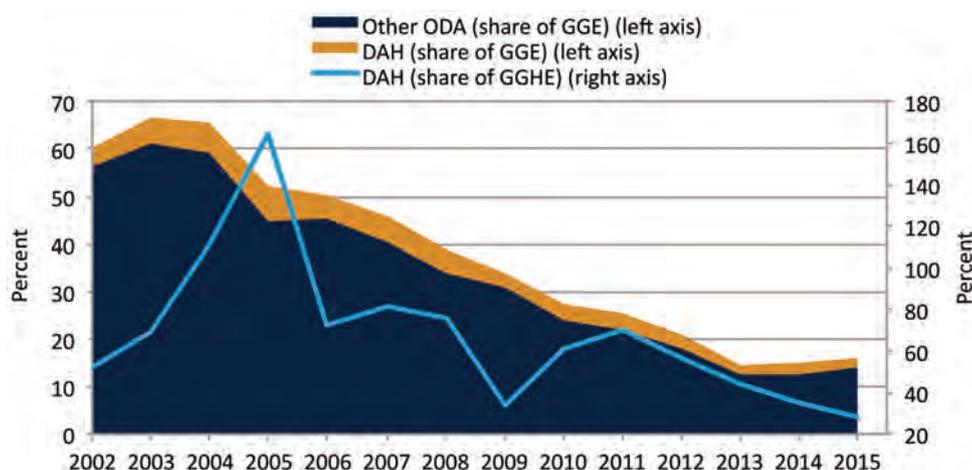
Source: OECD 2017; World Bank 2017.

Figure 3-20: Total ODA and DAH per Capita (2002–15) (US\$ per capita)



Source: OECD 2017; UNPD 2017.

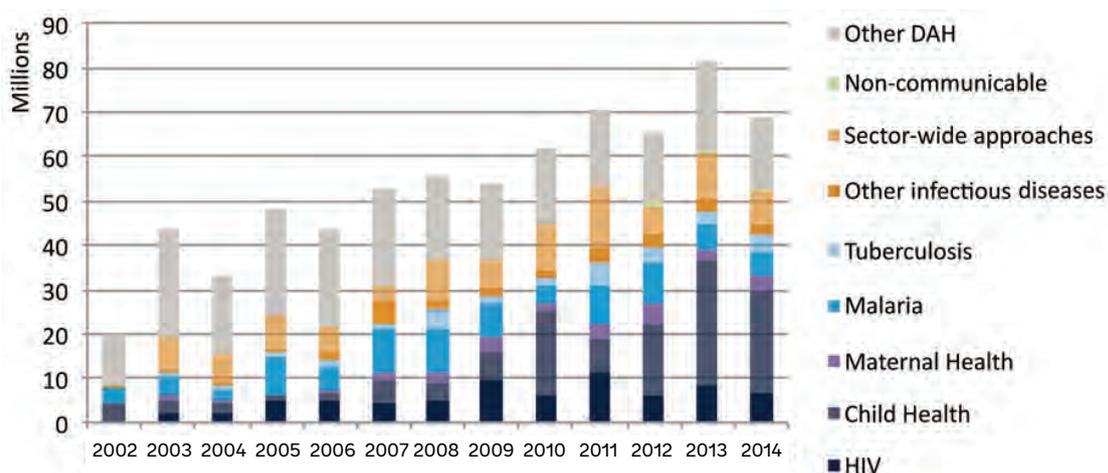
Figure 3-21: Total ODA and DAH as Share of GGE and GGHE (2002–15) (%)



Source: OECD 2017; World Bank 2017.

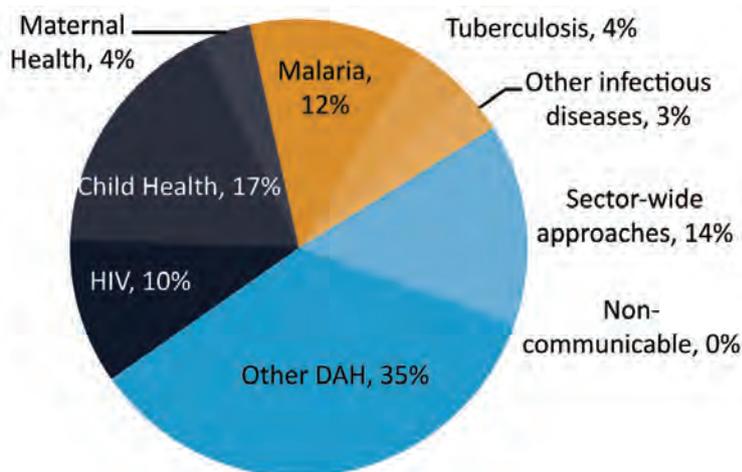
Figure 3-22 illustrates the general trends in DAH by health focus area. A significant share of the increase in DAH in recent years can be attributed to the country’s focus on MCH, nutrition and immunization. While DAH for MCH accounted for 21 percent of total DAH over the 2002–14 period its share has averaged around 31 percent since 2010 and peaked in 2014 at 38 percent. General health system strengthening (HSS) has been another focus area in recent years, while development aid earmarked for specific disease programs such as HIV, TB, and Malaria take a large share of the total DAH (Figures 3-22 and 3-23).

Figure 3-22: DAH by Health Focus Area (2002–14) (US\$ millions)



Source: IHME 2017a.
Note: In constant 2015 US dollars.

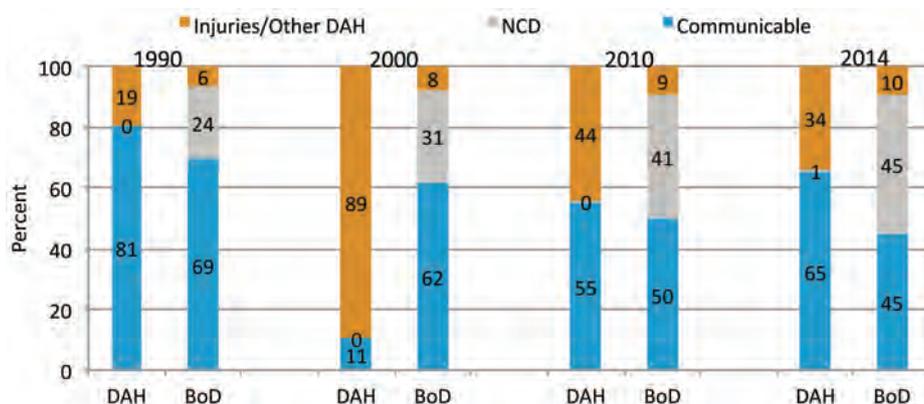
Figure 3-23: Share of Total DAH by Health Focus Area (2002–14) (%)



Source: IHME 2017a.

Notably, DAH that was specifically intended to support efforts to curb the burden from NCDs was insignificant—accounting for only 0.4 percent of total DHA disbursements between 2002 and 2014. This mismatch between the rising burden from NCDs and a neglect of its significance by the international community is further illustrated in Figure 3-24. While the share of DALYs lost due to NCDs increased from 24 percent in 1990 to 45 percent in 2014, DAH is dominated by the fight against communicable diseases and to support MCH services. On the one hand, the decrease in BoD from communicable diseases is a success that has been contingent on the support of the international community; on the other hand, the epidemiological transition requires a realignment of domestic and international resources targeted at building the capacity of the public health system to address the double disease burden.

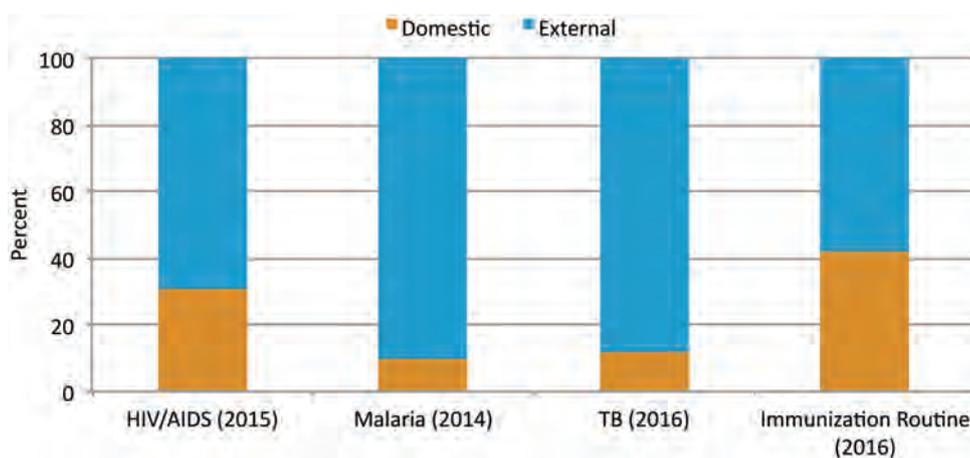
Figure 3-24: BoD (as % of DALYs) versus DAH (as % of total DAH) (1990–2014)



Source: IHME 2017a and 2017b.

Lao PDR’s dependency on external financing is particularly evident in disease-specific programs. The share of external funding for the HIV response was 70 percent in 2015 (equivalent to 2.6 percent of GGHE), 90 percent for Malaria control in 2014 (1.6 percent), 88 percent for TB in 2016 (1.3 percent), and 58 percent for routine immunization in 2016 (7.2 percent) (Figure 3-25).

Figure 3-25: Health Spending by Program and Sources (latest available year)



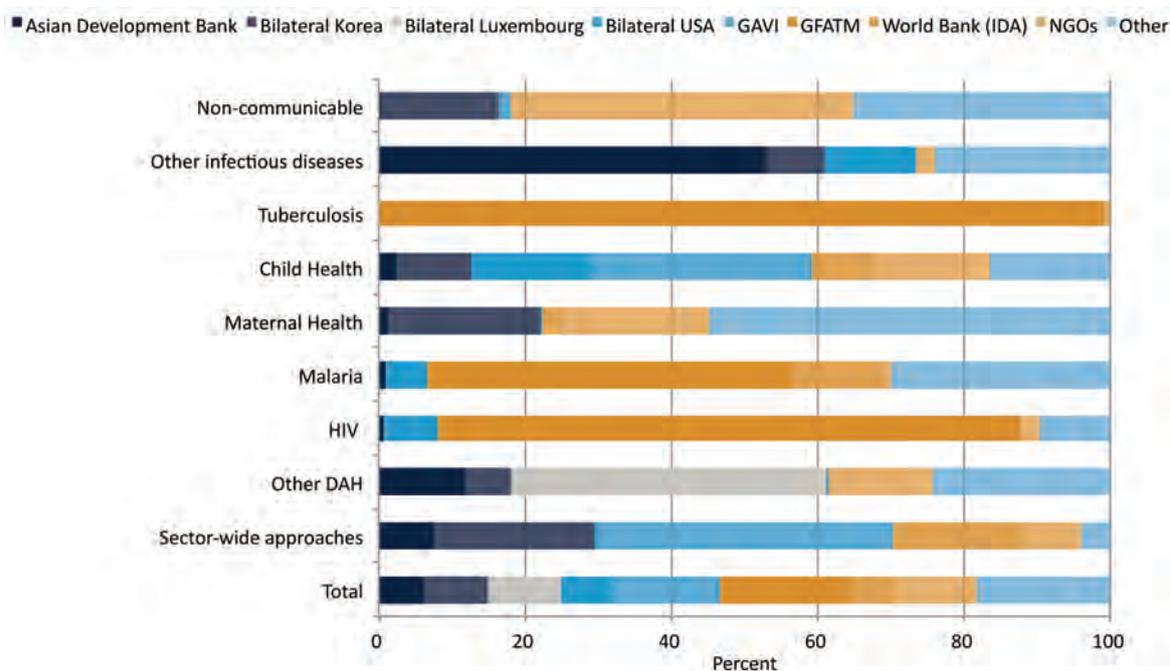
Source: GoL 2016; WHO 2014b; WHO 2017b; WHO/UNICEF 2017b.

In 2014, the Global Fund to Fight AIDS, TB, and Malaria (the Global Fund) was the largest health donor in Lao PDR, accounting for 17.6 percent of total DAH and providing the bulk of DAH for its three focus diseases. As of March 2017, the Global Fund has committed US\$153 million, of which US\$142.9 million has been disbursed. About 34 percent of the Global Fund grants were assigned to HIV and AIDS, 20 percent to TB, and 44 percent to Malaria control. On average, Global Fund disbursements accounted for about 6.3 percent of the annual THE between 2010 and 2014.



Other donors providing significant funding to the health sector are Gavi (14.7 percent of total DAH in 2014), Luxembourg (9.8 percent), the Republic of Korea (8.7 percent), the United States (7.1 percent), the Asian Development Bank (6.2 percent) and the World Bank (5.9 percent). The country’s recent focus on MCH has been supported mainly by the Republic of Korea, Japan, the United States, Gavi, and the World Bank (IDA). Sector-wide approaches—specifically HSS, has been a focus of development aid from the Republic of Korea, the World Bank (IDA), and Gavi (Figure 3-26).

Figure 3-26: Share of Major Donors in DAH for Health Focus Areas (2014)



Source: IHME 2017a.

HIV and AIDS expenditure increased steadily from around US\$5.0 million in 2008 to a peak of US\$11.7 million in 2011, but has since fallen to US\$7.1 million in 2014 and US\$8.0 million in 2015. The share of domestic funding has increased significantly, however, from less than 2 percent in 2008-09 to 31.5 percent in 2015. While the 2016 Global AIDS Monitoring Report did not include specific expenditures by the government, salaries for medical personnel for HIV testing and counseling as well as the administration of antiretroviral therapy (ART) are paid from the government budget. Furthermore, the government funds infrastructure, maintenance and running costs under the Global Fund “willingness to pay” scheme.

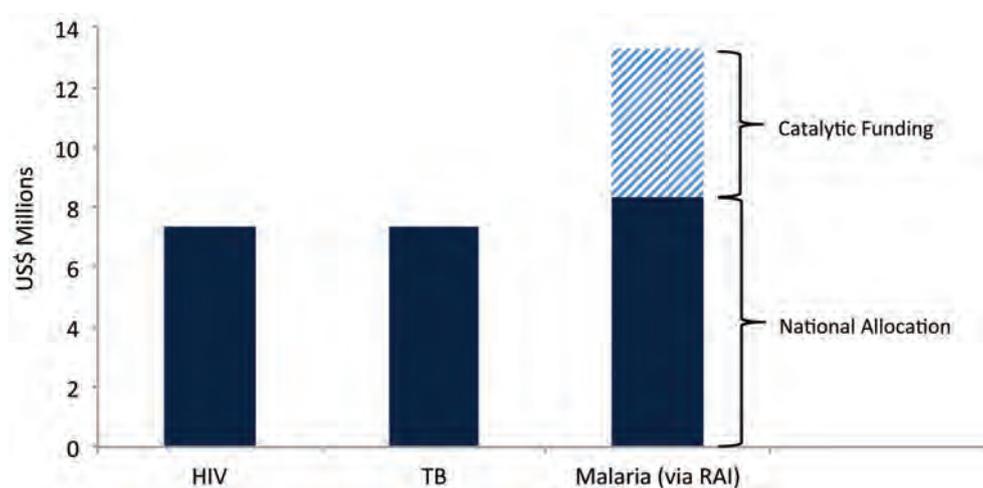
The largest share of HIV and AIDS expenditure from international sources in 2015 went to prevention-related activities (32 percent), followed by treatment and care (22 percent), human resources (22 percent), program management and administration (20 percent), and enabling environment (4 percent) (GoL, 2016). In the latest funding request to the Global Fund, the largest share of funds is intended for treatment, care, and support (41 percent), followed by prevention (30 percent, with a focus on sex workers and their clients, men who have sex with men, and transgender persons), program management (24

percent), and monitoring and evaluation (6 percent). Funding for HIV remains a challenge in Lao PDR: while there is funding for HIV on the national level through the national HIV program, budgets for provincial HIV-related activities have been very limited or nonexistent.

Allocations by the Global Fund constituted the largest share of Malaria expenditure between 2011 and 2014 at 77 percent of total expenditure, while GoL has financed 17 percent of total expenditure (WHO, 2014b; WHO, 2015). The government mainly finances salaries and allowances as well as operational costs for the National Malaria Program. According to the country’s Global Fund Malaria Concept Note for the 2015 to 2017 period, the greatest area of Malaria spending was for prevention (vector control) (43 percent), followed by program management (25 percent), case management (22 percent), and HSS relevant to Malaria control (10 percent). Spending on TB has also trended down in recent years, from US\$4.5 million in 2012 to US\$2.9 million in 2016; however, the share of TB expenditure that was financed by GoL has increased from a negligible level to around 12 percent in 2016 (WHO, 2017b). The government finances salaries for medical personnel responsible for TB as well as from a contribution under the Global Fund “willingness to pay” scheme.

For the 2017–19 period, the Global Fund has allocated a total of US\$28.1 million to Lao PDR. Of this, US\$7.4 million has been allocated to HIV and AIDS, US\$7.4 million to TB, and US\$13.3 million to Malaria (US\$8.3 million as a country allocation and US\$5 million as multicountry catalytic funding within the Regional Artemisinin-resistance Initiative - RAI) (Figure 3-27).

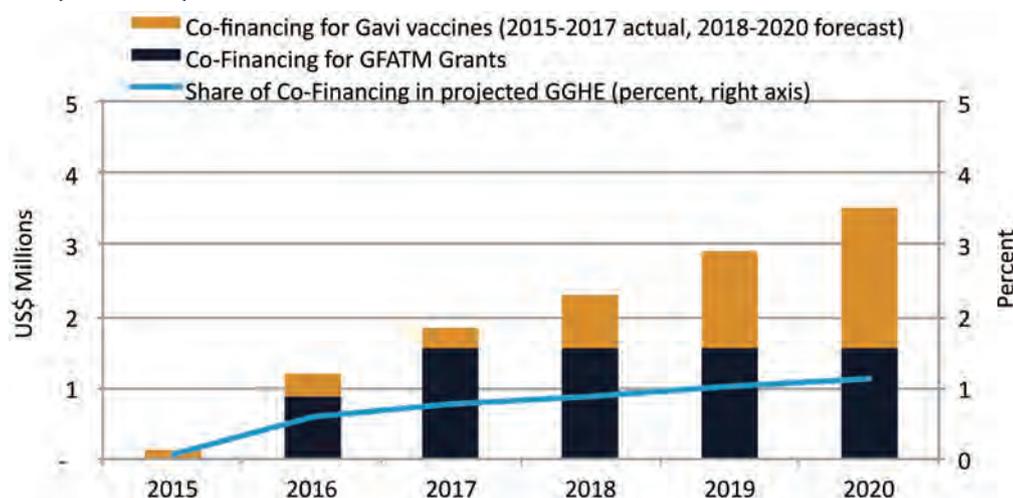
Figure 3-27: Global Fund Allocation by Program (2017–19 Allocation Period) (US\$ millions)



Source: Global Fund 2017.

The cofinancing requirement for this Global Fund allocation is US\$4.6 million (US\$3.0 million for the HIV/TB component and US\$1.6 million for the Malaria component), which is 20 percent of the total grant amount for the period 2018–20. If the cofinancing requirements for these Global Fund grants, as well as for Gavi vaccines (US\$4.1 million; increasing from US\$750,000 in 2018 to US\$1.3 million in 2019 and to US\$2.1 million in 2020),²⁰ are considered, total cofinancing requirements for GoL over the three years of the utilization period amount to US\$8.7 million, equivalent to 1.1 percent of the projected amount for GGHE (Figure 3-28).²¹

Figure 3-28: Cofinancing Requirements for the Global Fund Grants and Gavi Vaccines (2015-20)²²



Sources: Lao PDR 2016; Gavi 2017; Global Fund 2017.

While external financing will continue to play an important role in providing both financial and technical resources to key health programs, including HIV, TB, Malaria and immunization, the level of donor funds is expected to decline in coming years (Table 3.6). Some key donors have initiated the transition process to gradually transition away from donor support and increase domestic financing through cofinancing.

²⁰ The estimated cofinancing requirement for Gavi does not include the additional cofinancing requirement associated with introduction of new vaccines, except the HPV routine vaccination, that are under consideration.

²¹ Projections of GGHE in this paragraph and in Figure 3-28 assume a GDP growth as projected by the IMF and a share of GGHE in GDP as in 2016 (1.4 percent).

²² The cofinancing requirements of the Global Fund grants include financing for salaries and benefits of government staff as well as the specific cash contributions to purchase equipment and commodities. The cofinancing and willingness to pay commitments of the Global Fund (2015-17) exclude the government contribution toward staff salaries and benefits.

According to Gavi eligibility criteria,²² Lao PDR has entered Gavi’s final phase of support, known as the accelerated transition phase in 2017 and is expected to fully transition from Gavi support in December 2021. So far, the government has mainly financed personnel costs (52 percent of total domestically financed spending in 2014) and only a minor share of the costs of vaccines (9 percent). The Global Fund (Global Fund Strategy 2017-20) has also indicated its intention to increasingly direct investments to high-burden countries with the least ability to pay, and Lao PDR is, therefore, likely to graduate from Global Fund funding within the next few funding cycles. The country expects a decreased funding allocation and a corresponding increase in cofinancing requirements and to commence the transition process.

Despite the large injection of funds for key health services and programs, challenges remain. Fragmentation in financing sources for these key health services and programs at national and subnational levels is an issue for Lao PDR in moving forward. Donor funding also contributed to this fragmentation.

Table 3-6: Donor Partners Funding for Specific Programs

Program	Major donor (primary recipient in parenthesis)	Subrecipients	Procurement	Donor shares of total spending (%)
HIV/AIDS	GFATM (DCDC)	CHAS and four NGOs / FBOs		70
TB	GFATM (DCDC)	NTC and six NGOs		88
Malaria	GFATM (DCDC)	CMPE, two government agencies, and three NGOs		90
Immunization	GAVI (MoH)		UNICEF	72

Sources: Global Fund 2017; Gavi Alliance 2017.

Notes: DCDC = Department of Disease Control (MoH), CHAS = Center for HIV/AIDS and STI, CMPE = Center for Malaria Parasitology and Entomology, NTC = National TB Center.

The involvement of private and nongovernmental organizations (NGOs) in the country is limited, and, as such, the major part of DAH is channeled directly to supporting the gaps in public sector health services. For example, grants from the Global Fund are channeled through the Department of Disease Control in MoH as principal recipient and through government agencies as primary subrecipients (Center for HIV/AIDS and STI, Center for Malaria Parasitology and Entomology, National TB Center) while nongovernmental subrecipients play a marginal role. The government has adopted an HSS strategy to improve cooperation between the three disease programs funded by the Global Fund; however, the integration of services will provide a major challenge to the health system that lacks an integrated continuum of care as well as effective referral systems.

From an external financing perspective, one of the major challenges for Lao PDR is to continue expanding service coverage for the key health programs that have been traditionally financed by donors, and accelerate and sustain the progress toward UHC while effectively managing the transition from external financing and ensuring sustainable financing for UHC.

Integration of externally funded programs into a well-functioning health system and reducing fragmentation in financing and service delivery is key to ensuring future sustainability and enhancing health outcomes. While several key donors have initiated dialogues around transition, it is critical for the country to develop a clear transition strategy or plan to ensure a smooth transition from externally funded programs to domestically financed, integrated health programs.

Box 3-2: Efficiency of Health Spending

Despite the challenge of low spending in the health sector, efficiency and quality of spending are keys to ensuring value for money and that health expenditures lead to improved health outcomes for Lao PDR. The country faces a number of efficiency challenges in the health system. Possible areas that could lead to inefficiencies in the health system of Lao PDR include:

- ✓ poorly motivated staff with no measurement or incentives for performance;
- ✓ duplications, fragmentation due to service delivery and parallel financing by development partners and NGOs;
- ✓ underuse of generic drugs and higher drug prices due to irrational markup practices;
- ✓ overuse and oversupply of equipment, investigations, and procedures;
- ✓ planning and information on service delivery, human resources, and availability of equipment and supplies not fully coordinated or integrated;
- ✓ lack of clear norms and standards for services to be provided and applied across the country;
- ✓ poor regulation of health workers and informal health providers that create opportunities for medical errors; and
- ✓ waste, corruption, and fraud.

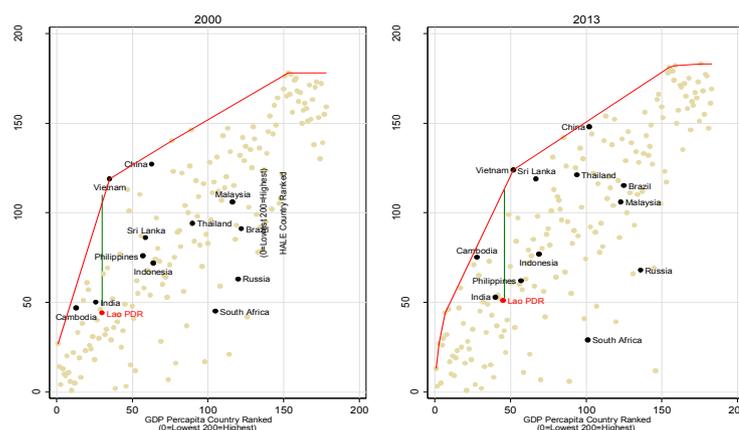
Several countries have spent less or a similar level as Lao PDR on health, and yet have achieved better health outcomes, measured as maternal and infant mortality rates, as well as better health coverage, measured as PDTP3 and measles.

Country	GMI	The per capita	MMR	IMR	DPT3 (%)	Measles (%)
Myanmar	1280	20.3	184	40.7	75	86
Bangladesh	1080	30.8	188	32.1	95	88
Lao PDR	1640	32.6	213	52.3	88	87
Pakistan	1400	36.2	184	67.4	73	61
Cambodia	1020	61.3	167	26.3	97	80

Note: GNI and THE per capita in US\$; MMR per 100,000 live births; IMR per 1,000 live births.

To assess the efficiency of the Lao health system, Data Envelopment Analysis (DEA) was applied to deliver the estimates of relative technical efficiency in transforming inputs into outputs measured as health-adjusted life expectancy (HALE) at birth. The results from the DEA analysis are shown in the figure below. These suggest that Lao PDR can improve efficiency in attaining health outcomes. Increased spending on health during the period 2000-13 has only resulted in a very moderate improvement in comparison with other countries.

Efficiency – DEA Analysis



Source: World Development Indicators database
y-axis: HALE-Healthy Life Expectancy at Births (years)
x-axis: GDP Per Capita in 2013 Constant US\$
Red line= DEA line; Green line=Distance to DEA line





Section 4

Immunization Assessment

4.1 Introduction

This section presents an overview of the National Immunization Program (NIP) in Lao PDR, outlines the challenges to future self-financing and quality improvement, and suggests possible options for improving immunization services as an essential part of moving towards UHC. This in-depth assessment is intended to identify bottlenecks, gaps, and opportunities in the areas of financing, service delivery, governance and institutional arrangements that use immunization services as a sensitive tracer for key health services that are currently and predominantly externally financed.

Given its growth in GNI per capita, Lao PDR entered Gavi's final phase of support, known as the accelerated transition phase in 2017 and is expected to fully transition from Gavi support in December 2021. The year 2017 will be the last year that Lao PDR will be eligible to apply for further Gavi support. As Lao PDR transitions out, it will be expected to fully self-finance Gavi-supported vaccine costs, take over relevant costs covered by Gavi through various cash grants—most importantly the HSS grant—and arrange either for alternative sources for technical assistance and/or strengthen domestic capacity sufficiently to become independent from external technical assistance that is supported by Gavi.

During the period 2000-15, Lao PDR recorded a significant decline in early childhood mortality rates. The infant mortality rate decreased from 83 in 2000 to 51 in 2015, while the child (under-five) mortality rate dropped from 118 to 67. The main factors explaining this progress are: (i) continuous improvements in the socioeconomic status of the population; and (ii) increased utilization of essential health services, in particular, vaccination and improvements in early initiation to, and exclusive, breastfeeding.

Despite these improvements, the country has the highest child mortality level in South-east Asia and the national average conceals high levels of disparities in child mortality across socioeconomic groups, by ethnicity, provinces, and educational level of mothers. Each year, an estimated 15,000 children die in Lao PDR before reaching their fifth birthday. An estimated 6,000 of these deaths have undernutrition as the root cause. Most child deaths occur among poor and disadvantaged populations and a significant share (about one in ten) is due to vaccine preventable conditions (Table 4-1). There is a need to first understand the causes of unjust disparities and urgently tackle the barriers.

Table 4-1: Deaths Caused by for Vaccine-Preventable Diseases (VPDs) in Under-Fives (1990–2016)

Rank in 2016	VPD	No. of Deaths			
		1990	2000	2010	2016
1	Diarrheal Diseases	4,510	2,614	1,421	835
2	Whooping Cough	424	396	321	180
3	Meningococcal Meningitis	223	217	156	127
4	Measles	3,819	3,067	210	76
5	Encephalitis	67	74	75	72
6	Typhoid Fever	35	38	61	59
7	TB	168	142	80	47
8	Haemophilus Influenzae Type B Meningitis	62	58	43	35
9	Tetanus	840	269	74	22
10	Dengue	1	3	20	15
	Total Deaths of Under-Fives	30,015	26,332	18,157	14,873

Source: IHME 2017b.



4.2 Immunization Program Overview

4.2.1 Agencies and Organizations Involved in the Immunization Program

NIP is a structural unit of the Department of Hygiene and Health Promotion of MoH. It performs its routine operations under the management of the Director of the Maternal and Child Health Center (MCH-C), which reports directly to the Director of the Department of Hygiene and Health Promotion and the Director of the Cabinet of the Ministry of Health. There are five different structural units (sections) in NIP: (i) planning and financing; (ii) cold-chain and logistics; (iii) information and communication; (iv) statistics; and (v) office administration. Each unit is staffed by three to five persons.

While vaccines are procured from WHO-prequalified suppliers by the UNICEF Supply Division, technical guidance to NIP is primarily provided by UNICEF and WHO through technical specialists mostly financed through Gavi. In addition, there is a National Immunization Technical Advisory Group (NITAG) established in 2015 with members from different departments of the MoH and one member from Ministry of Finance and a Technical Working Group (TWG) for Maternal and Neonatal Child Health comprising development partners and relevant officers from MoH.

A number of development partners provide support directly to NIP as follows:

- **WHO:** WHO provides support in cases of disease outbreaks; vaccine campaigns; training of trainers for microplanning at provincial and district level; training regarding adverse events following immunization; and monitoring and supportive supervision to all provinces one to two times a year. WHO (Geneva) also undertakes pre-qualification of suppliers of vaccines.
- **UNICEF:** UNICEF supports two provinces for routine immunization (Phongsaly and Louangnamtha); purchase of cold-chain equipment (refrigerators); training in interpersonal communication and social mobilization (including provision of loudspeakers with songs and scripts provided on a USB); flipcharts, and Information, Education and Communication (IEC) materials. UNICEF also supports mass campaigns for the Expanded Program on Immunization (EPI) coverage in nine provinces. UNICEF has conducted field research as a foundation for preparation of a communication strategy, specifically for reaching the ethnic minority groups. This communication strategy which is costed at US\$1.5 million is yet to be financed. Lastly, UNICEF undertakes the procurement of all vaccines through their Copenhagen Supply Division.
- **Gavi:** Gavi provides HSS support to provinces, including strengthening of MCH services (for example, free delivery, ANC, PNC, EPI with training and microplanning for integrated outreach). A report on agreed performance indicators is provided to Gavi. Phase One of this support only included a number of districts in Vientiane Capital and Oudomxay, while Phase Two (that started in 2015) added Xaysombourn, Borikhamxay and Khammuane.
- **LuxDev:** LuxDev supports integrated outreach in Vientiane Province, Borikhamxay and Khammouan.
- **KOICA:** KOICA supports some emergency funds for immunizations and integrated outreach in Luang Prabang and Oudomxay province.

- **KOFIH:** KOFIH supports health system strengthening, training for health personnel, maternal and child health promotion and integrated outreach in Xiengkhuang and Huaphan province.

In addition, World Bank and ADB provide very substantial sector support which contributes to the building of the overall capacity of the health system and, thereby, both directly and indirectly, support the achievement of NIP goals. ADB support focuses on strengthening financial management as well as human resources management, while the World Bank is supporting the DHIS 2 as well as a transition from input-based to results-based planning, through Disbursement Linked Indicators (DLIs). Additional financing has in 2017 been provided to the HGNDP to support to increase coverage of DPT and Measles vaccination in the 50 lowest performing districts, support to expand integrated outreach and support to intensification of supervisory support to NIP.

4.2.2 Management of NIP

Implementation of NIP is based on a predominantly vertical structure with NIP program staff responsible for management of the immunization program under the overall direction and leadership of MoH. NIP drafts and approves the annual implementation action plans and budgets based on action plans submitted by the districts and provinces. NIP also receives funding from the central government based on approved budgets and transfers funds to the provinces through four quarterly transfers.

With technical support from UNICEF, NIP directly manages the supply chain for vaccines. This is based on: (i) quantification of field estimates and consolidation at the national level; (ii) annual procurement of vaccine and supplies undertaken by UNICEF Supply Division from WHO-prequalified providers; and (iii) storing of vaccines at national, provincial and district EPI stores.

Provinces can request an emergency supply from the national EPI office if they have a stock out. A system of monthly reviews of vaccine stocks at provincial and district levels—including triangulation with reported coverage and outbreaks—has recently been introduced. It is proposed to establish two regional storage facilities with a vaccine inventory and distribution system. NIP is also currently considering the cold-chain funding window from Gavi to upgrade cold-chain equipment.

NIP conducts monitoring and supervision visits twice per year to provinces and districts. Since early 2006, a task force for immunization supervision—comprising senior health officers from various departments in MoH, central hospitals, pediatricians and professors in MCH—provide technical support through two supervision visits per year based on needs at the local level. In the past year (2016), four NIP regional program supervisors have been stationed in each of the four regional field offices, each office covering six provinces.



Each province has an immunization program manager with the following responsibilities:

- **consolidation of the budgets and activity plans developed by the district immunization program staff**, based on the microplan, and forwarding the budgets and action plans to the central level;
- **disbursement of funds received from NIP to the lower levels of the system;**
- **distribution of vaccines received from NIP; and**
- **overall management of vaccines and logistics, as well as monitoring and supervision of immunization program implementation at the district level.**

NIP has a separate monitoring and evaluation (M&E) system using both paper-based and electronic systems. Paper-based recording and reporting forms, log books and other tools are utilized at all levels of the immunization service delivery system. This data is aggregated at the district level and entered into a Microsoft Excel-based system which is transferred to the provincial level and subsequently to the national level by phone or e-mail. NIP information is entered simultaneously into the comprehensive DHIS 2 from health centers and upwards—thereby placing a double reporting burden on the health staff. The two systems are currently being merged with a plan to phase out the Excel-based system.

A vaccine supplies and stock management system is in place at the national level; however, an assessment conducted in 2015 (JFR, 2015) revealed significant data quality issues within the immunization program. To address problems of poor quality and timeliness of data within the immunization program, NIP drafted a data quality improvement plan in 2016. Supported by the WHO and US Centers for Disease Control (CDC), subprovincial training on data integrity and use of data for action is being/will be conducted in 2016-17. NIP has also revised their supervision checklist to include specific components of data quality assessment for routine supervision. A specific MCH Supervisory Checklist that includes information regarding NIP has recently been introduced. The two checklists are intended to be merged into one comprehensive list.

4.2.3 Immunization Service Delivery

Immunization services are provided at all health service levels—at provincial and district hospitals as well as health centers through a mix of fixed site and outreach services that depend on the distance of the community from a health facility. Villages further away from the health center (5-10 kilometers or more than one hour) are provided immunization through outreach services that are provided by health center staff once every three months. Facility-based immunization services are part of the integrated MCH services, whereas outreach immunization services, which provide about 58 percent of the first and 86 percent of the second measles immunization are generally provided and funded separately from the integrated MCH outreach services. Due to the geography of the country, a large number of villages can only be reached through outreach and, in several cases, health staff have to walk to the villages and stay overnight in order to cover all children within the target area. This is especially problematic for health centers that do not have a functioning cold-chain since the staff first have to travel to the district health office to collect the vaccines and then to villages which may be a full day's travel from the health center. On return they again have to travel to the district health office to return unused vaccines that

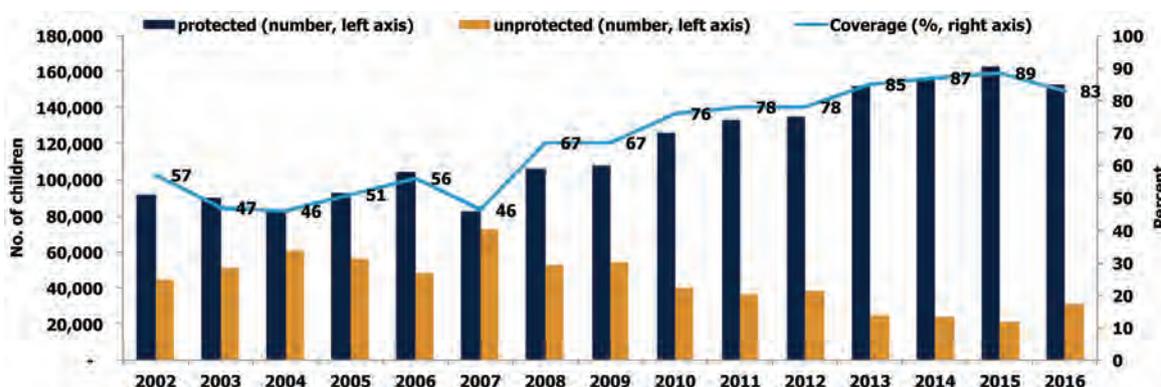
have by then been kept in a cold box for two to three days.

Integrated outreach from the health facility is currently being introduced while a more comprehensive integrated outreach package is being promoted by the MCH Center of MoH. There has recently been a move towards integration of immunization outreach with the integrated MCH outreach services which includes ANC, PNC, family planning and child-growth monitoring—in addition to (i) immunization for all children aged under two years; (ii) Tetanus Toxoid immunization for women aged 15-45; (iii) iron-folic acid tablets for pregnant women and postpartum women; (iv) deworming and Vitamin A supplementation twice per year; and (v) health education. Growth monitoring and promotion is added for facilities with sufficient number of health staff and capacities.

4.2.4 Immunization Outcomes

Lao PDR provides the standard “routine” immunizations (DTP, BCG, TT2, OPV, HepB, Hib) and, since 2001, has introduced seven new antigens (Pentavalent, PCV, IPV, MR, JE, Seasonal Influenza campaign, and HPV demo)²³ (Figure 4-1). Furthermore, the introduction of HPV and rotavirus vaccine is currently being planned for 2018 by the NIP. This raises a number of challenges due to the lengthy vaccination schedule; increased number of shipments; more diversified target population; potentially higher resistance against vaccination (due to multiinjections per visit); and the higher cost of both vaccines and service delivery. For example, the PCV (Pneumococcal Conjugate Vaccine) accounted for 44 percent of total vaccine cost in 2016.

Figure 4-1: Routine Immunization Coverage in Lao PDR (2002–16)



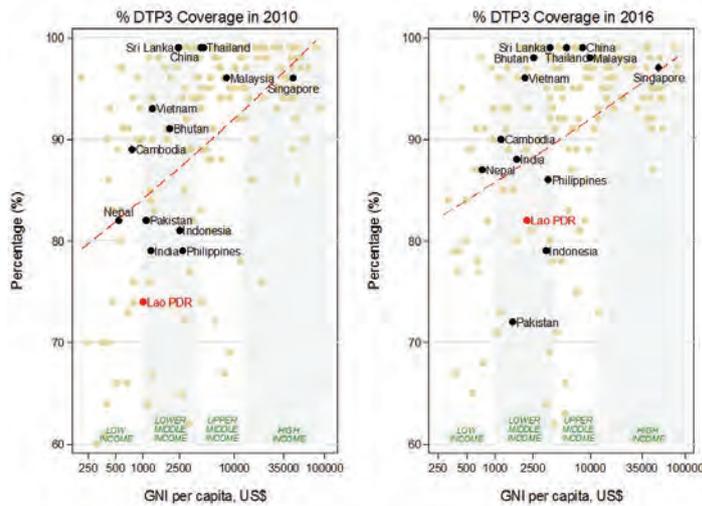
Source: NIP data 2016.

²³ DTP=Diphtheria, Tetanus and Pertussis Vaccine; BCG=Bacillus Calmette–Guérin Vaccine; TT2=Tetanus Toxoid Vaccine; OPV=Oral Polio Vaccine; Hib=Haemophilus influenzae; HepB=Hepatitis B Vaccine; Pentavalent=Pentavalent Vaccine; PCV= Pneumococcal Conjugate Vaccine; IPV= Inactivated Polio Vaccine; MR= Measles Rubella Vaccine; JE= Japanese Encephalitis Vaccine; HPV= Human Papillomavirus Vaccine.

There has been a steady improvement in immunization coverage since 2010 (Figures 4-2 and 4-3). According to the latest available WHO-UNICEF estimates, immunization coverage rates increased for DTP3 from 74 percent in 2010 to 82 percent in 2016; and the coverage of single measles vaccination at nine months increased from 64 percent in 2010 to 76 percent in 2016. Economic, urban-rural, geographic, and ethnic-group related inequalities in health outputs and outcomes, including immunization coverage rates, are, however, widespread and remain major policy challenges in Lao PDR.



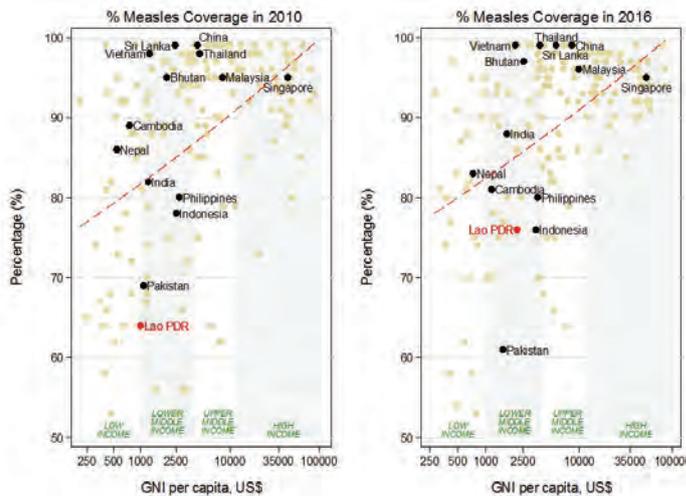
Figure 4-2: DTP3 Coverage (2010 versus 2016)



Source: World Bank 2017.

Note: Both x and y axes in log scale.

Figure 4-3: Measles Immunization Coverage (2010 versus 2016)

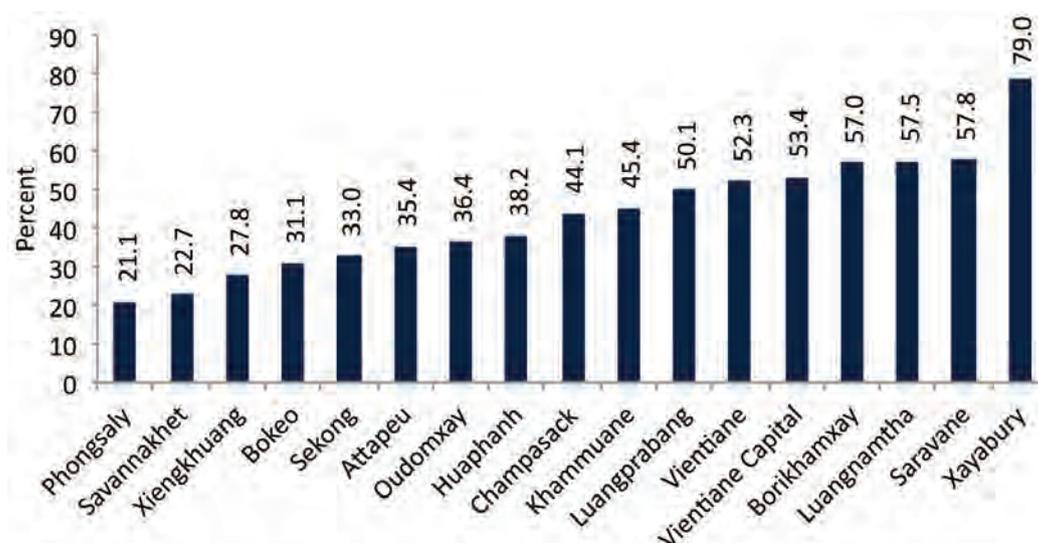


Source: World Bank 2017.

Note: Both x and y axes in log scale.

There are, however, wide differences between provinces in overall health services, including immunization coverage. The routine immunization coverage rate ranges from a low of 21.1 percent in Phongsaly province to a high of 79.0 percent in Xayabury province (Figure 4-4). The wide differences also apply to income groups. The immunization coverage for the poor is less than one-half that of the richest income group (MoH, and Lao Statistics Bureau, 2012). A gender gap in immunization coverage could exist and can be a potential source of concern; however, the current immunization data is not gender disaggregated. Gender differences, therefore, cannot be assessed.

Figure 4-4: Routine Immunization Coverage by Province (2011-12) (%)



Source: MoH and Lao Statistics Bureau 2012.

Survey data from the 2015 National Immunization Survey shows that, of the 5,981 children between 12 and 23 months surveyed, 91 percent had received at least one routine vaccination, but only 29.7 percent of these children had valid documentation for their immunization. Based on evidence from all sources (home-based vaccination cards, health facility records and caretaker recall), the coverage was 81.4 percent for the third dose DTP/HepB/Penta, while 63 percent were fully immunized and 9 percent had not received any vaccination.

When the caretaker recall is omitted, the recorded number of fully immunized children drops to 29.7 percent, while the number of children who have not received any immunization before the age of 12 months increases to 28 percent. With the increasingly large number of vaccinations to be provided, caretaker recall may be put into question; outbreaks of Diphtheria (2012–13) and Measles and the occurrence of Polio in 2015–16 indicates that this survey data does, in fact, represent the reality, despite different data being reported through routine reporting.²⁴

²⁴ Measles outbreak (cases confirmed by Lab): 2010, 2011, 2012, 2013, 2014, February 2015; Diphtheria outbreak (cases confirmed by Lab): 2010, 2011, 2012, 2013, 2015, 2016; Pertussis outbreak (cases confirmed by Lab): 2014, 2015, 2016; Tetanus outbreak and death: 2012, 2013, 2014, 2015, 2016; Vaccine-induced polio cases in 2015, 2016.

Findings from other survey data indicate that coverage with all major antigens in Lao PDR show wide variation between districts—for example from 47 percent to 140 percent (reported) for Penta3 in 2014. This also underlines the issues related to data quality for both reported figures of vaccinated children and population targets. The denominator target used at all levels of the health system is always an estimate (projection) from the most recent census with significant variations at the national and provincial levels. In addition, the reporting back to health centers for children immunized at a higher-level facility is weak, leading to double counting.

There is a high dropout rate of children who do not complete the full vaccination schedule, especially in rural areas with predominantly ethnic minority populations. During group discussions held there at the time of the survey, a number of suggestions were made to address this problem including: (i) improving monitoring and ensuring regularity of outreach; (ii) improving health staff capacity to provide immunization services and communication; and (iii) working with the community and developing communication material targeting minorities.

There is evidence that a high proportion of vaccinations are not provided on time, with most infants vaccinated when there is already a high risk of infection. Only 70 (13 percent) of 520 children whose vaccination records were reviewed by the team in LSIS 2011-12 received all three doses of DTP/HepB/Hib vaccine by the recommended age of four months. Among children registered for vaccination, one-third failed to receive all doses and thus were incompletely immunized, indicating a problem with follow up.

4.2.5 Causes of Low Immunization Coverage

A number of surveys and studies have assessed service readiness for immunization services. All district hospitals have preventive care for children aged under five years and reported running routine immunization services for children. The average readiness for district hospitals for preventive care and immunization were 63 percent and 77 percent respectively. About 13 percent of all district hospitals also had all the tracer items required for providing immunization services to their clients (Table 4-2).

According to one survey (MoH, 2014), almost all health centers reported running routine immunization and preventive and curative primary care services for children; however, 96 percent of these facilities did not have the required diagnostic tests on site. In addition, 40 percent of health centers lacked required medications and commodities and about 25 percent did not have the equipment needed to provide the service. None of the health centers surveyed had all the tracer items required for immunization, preventive and curative care services. Overall, only around 60 percent of the health centers surveyed could be considered ready to provide routine immunization and preventive and curative care for children (Table 4-2).



Table 4-2: Availability of Tracer Items Required for Provision of Vaccination Services

Tracer Item	% Available at District Hospital	% Available at Health Center
EPI Guidelines	28	84
At least one staff trained in EPI	68	75
Cold Box with Ice Packs	100	96
Refrigerator	95	76
Sharps Container	100	99
Disposable Syringe	98	100
Measles Vaccine	95	77
DTP/ Hib/ HepB Vaccine	95	77
OPV	65	56
BCG	93	71
Facilities with all items	13	0
Mean Availability of Tracer Items	77	66

Source: MoH 2014.

The 2013 health center workforce survey conducted by the World Bank indicated that almost one half (44 percent) of health center staff had never undergone any in-service training. Where training was received, it was often mismatched with the type of health services being provided by the health worker. Although 85 percent of health center workers spoke the most common language in the community (typically Lao), only 31 percent spoke the second most common language and 7 percent spoke the third most common language. Language remains a critical issue for accessing services for ethnic groups.

A study (Nanthavong et al., 2015) to determine the causes of the 2012 Diphtheria outbreak in Huaphan found a serious deficiency in immunization coverage of children under five years. Whether significant proportions of children targeted by EPI are not reached by mobile teams or the vaccines are poorly preserved and used, or that the immunogenicity may have been low, remains to be determined more precisely but the first two factors appear to be causally related. A major difference between the immunization rates observed in children whose 'yellow card'²⁵ could be shown (83.3 percent) and children without a yellow card (36.4 percent) were also found in this study.

A small study (Mobasser et al., 2016) carried out in collaboration with the Swiss Red Cross in rural districts of Luang Prabang province collected information on a number of family factors, including whether families owned a yellow card. Hierarchical regression models were used to analyze the effects of these factors on outcome measures of children's total immunization coverage and growth monitoring. After excluding 15 families for missing or erroneous birthdate information, the final sample consists of 405 children with ages ranging from 6 to 34 months of age.

²⁵ The 'yellow card' refers to the medical record-keeping booklet mainly for child immunizations kept with the family.

This study found that immunization and growth monitoring were significantly predicted by distance to the nearest health center or hospital, mothers' contact with health facilities and health professionals (both antenatal and during childbirth), and ethnic group membership. Interestingly, the strongest individual predictor was related to whether the family was in possession of the yellow card, explaining an additional 5.4 percent and 1.6 percent of the variability in immunization coverage and growth monitoring outcomes respectively, above and beyond predictions of reduced models. This is specifically interesting since these records are often found to be out of stock at the health facility level.

A data driven time-series analysis (de Figueiredo et al., 2016) to examine trends in coverage of DTP vaccination across 190 countries over the past 30 years found a transitional stage wherein vaccines in the region are broadly accessible, but that some factors (including attendance of medical staff at births) are restricting uptake of DTP3. This notion seems to be supported in the literature, which cites a range of socioeconomic determinants (including refusal from groups with higher socioeconomic status, personal beliefs, and low access to health care facilities) as barriers to vaccination. The study found the strength and consistency of births attended by skilled health staff as an informer of DTP3 coverage rates, and highlights the potential of this factor for use as a proxy indicator of the condition of a health care system.

From the above-mentioned surveys and studies, the bottlenecks to improved program management and service delivery can be summarized as:

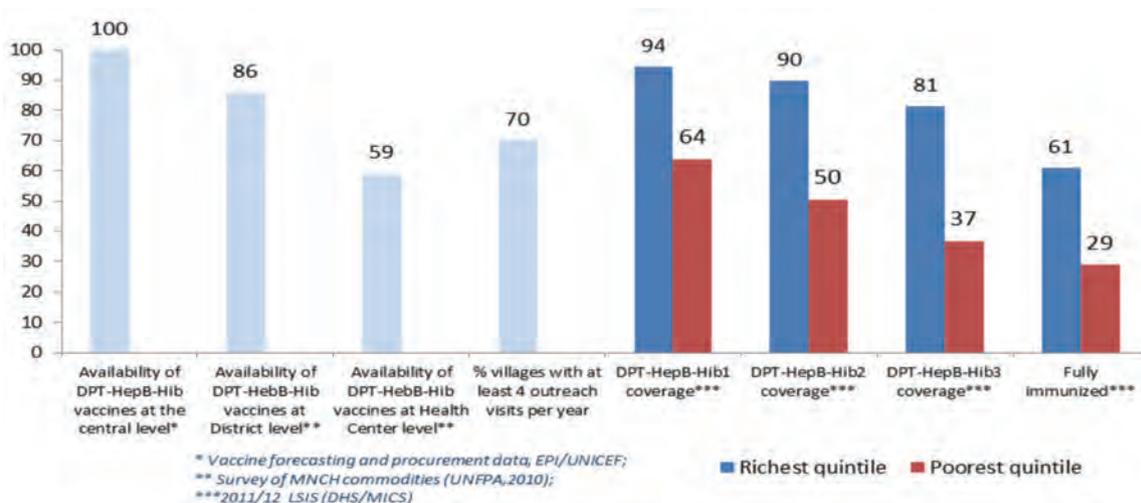
- **lack of vaccine and supplies at district hospital and health center levels;**
- **limited staff skills (communication and language);**
- **inadequate cold-chain at peripheral level;**
- **lack of financing and guidelines for microplanning and integrated outreach;**
- **inadequate transport for collection of vaccines (when no cold-chain equipment and health center) and to conduct adequate outreach;**
- **overlaps across programs with vertical NIP management structure;**
- **gaps in supply of vaccines and cold-chain;**
- **use of data for planning and performance monitoring - substantial differences between reported and survey data;**
- **limited frequency and quality of field supervision; and**
- **fragmented financing for service delivery - especially for outreach.**

4.2.6 Demand-side Issues Limiting Immunization Coverage

A UNICEF-supported equity and bottleneck analysis in 2013 and 2014²⁶ (Figure 4-5) found that the “bottlenecks to equity of service access” ranged from purely economic issues to psychological and faith-based barriers in both the demand and supply of services. The factors contributing to vaccination resistance include: local culture, fear of side-effects, no knowledge about the benefits of immunization, being away from home for agricultural season, not being informed or being informed too late for immunization activities.

²⁶ This analysis included an intensive literature review, supported by key informant interviews.

Figure 4-5: Bottleneck Analysis for Immunization Services Delivery (Tanahashi Model)



Source: UNICEF 2013.

Key informant interviews with national and international experts and institutions further provided the evidence that the issues confronting underserved populations requires a deeper insight in a highly structured manner. This was to be achieved by invoking qualitative research as a tool to expose and share with others the undercurrents of not just the health-seeking behavior of communities but also the health providers’ cross-cultural communication skills, competency in communication and the volunteers’ and mass organizations’ (for example, Lao Front for National Construction, and Lao Women’s Union) skill in reaching out to the communities facing social exclusion and alienation. Terms of reference for such qualitative research have been drafted but there is no indication that this research was ever carried out.

Following advocacy work by WHO and UNICEF, the government set up a communication task force, following a measles outbreak in 2015. This resulted in a number of strategy documents²⁷ that highlighted the following factors behind weak social mobilization:

- Rural community demand for vaccination remains low.
- The equipment and supplies to disseminate available IEC materials and strategies have been inadequate and cannot reach or educate parents on the importance of immunization.
- There is a deficiency of social mobilization and proper IEC messages for non Lao ethnic groups where vaccine hesitancy is evident.

²⁷ Lao PDR Polio Communication Strategy and Action Plan 2015-16; Lao PDR Integrated Communication Strategy and Communication Plan for EPI October 2015 to September 2020; Lao PDR Integrated Communications Strategy (ICS) and 5-Year Communication Plan for EPI 2015-20.

A few studies (not made widely available) conducted by the NIP in 2015 are said to have similarly revealed that the low level of community demand towards health care interventions and utilization of health services could be attributed to:

- lack of sufficient communication with the communities by health care service providers;
- lack of information and knowledge about immunization and its benefits;
- ethno-cultural factors;
- behavioral issues associated with health care service providers and community; and
- variable needs of the communities.

4.2.7 Supply Chain Management

Annual demand forecasts, vaccine technical and product specifications are prepared jointly between UNICEF and NIP. All vaccines are required to be WHO-prequalified, thereby ensuring quality and low prices. Supply and shipment of vaccines are regular and on time at central level. The government disburses funds for vaccine procurement in regular installments.

Use of the government budget to procure vaccines is subject to the Public Procurement Rules and Regulations (Decree of the Prime Minister on Government Procurement of Goods, Construction, Maintenance and Services, January 2004). An exemption from the application of the public procurement rules is granted by MoF for vaccine procurement to be conducted through UNICEF Supply Division on an annual basis; this is reinforced by a Memorandum of Understanding signed between MoH and UNICEF.

In 2010 Lao PDR conducted an assessment of effective vaccine management (EVM) that found several of the nine attributes falling short of the accepted threshold of 80 percent (Table 4-3). While substantial improvement was found in the 2014 EVM assessment, gaps were still found, particularly in maintenance, stock management, and information systems. The encouraging development, however, was improvement in mean EVM scores for all nine attributes when compared to the 2010 findings, although these were not as significant as expected. Performance in certain areas was still poor.



Table 4-3: Effective Vaccine Management Assessments (2010 and 2014)

Year	Level	Vaccine arrival	Temperature monitoring	Storage capacity	Building, equipment, transport	Maintenance	Stock management	Distribution	Vaccine management	Information systems
		E1	E2	E3	E4	E5	E6	E7	E8	E9
2010	LAO_1PR	58%	47%	84%	78%	47%	44%	35%	32%	36%
	LAO_2SN		80%	53%	70%	48%	72%	49%	57%	65%
	LAO_3LD		80%	65%	50%	48%	51%	48%	56%	68%
	LAO_4SP		68%	58%	54%	37%	37%	56%	62%	
2014	LAO2_1PR	65%	55%	92%	81%	69%	48%	49%	80%	47%
	LAO2_2SN		83%	80%	81%	65%	73%	80%	81%	67%
	LAO2_3LD		77%	79%	73%	56%	63%	82%	78%	50%
	LAO2_4SP		76%	88%	81%	53%	44%	82%	76%	36%

PR: Primary Level; SN: Sub-National Level; LD: Lowest Distribution Level; SP: Service Point

Source: Lao PDR, Gavi Transition Assessment Report.

Note: Green: 80-100%; Yellow: 60-79%; Red: below 60%; All levels must be green for the category to be accepted as green.

The following actions had been taken by Lao PDR between the two EVM assessments:

- **Introduction of a system of monthly review of vaccine stocks at provincial and district levels**, including triangulation of this information with that of reported coverage and outbreak of vaccine preventable diseases.
- **Setting up two regional facilities, for a more effective vaccine inventory and distribution system**, including regular monitoring of the provincial level stocks.
- **Training of staff right up to the district/health facility levels.**

The following additional actions are proposed:

- **Improving policies, guidelines and Standard Operating Procedures** governing key vaccine management and cold-chain logistics, including maintenance and transportation.
- **Defining clear roles and responsibilities of staff and divisions within MoH**, including province, districts and health centers, especially keeping in mind the provincial level decentralization for delivery of basic health services.
- **Introducing physical verification of vaccine stocks.**
- **Improving field level logistics management.**
- **Ensuring proper procurement and adequate supply and maintenance of cold-chain equipment**, both electrical and nonelectrical (passive coolers).
- **Ensuring consistent use of batch cards.**
- **Preparing guidelines for handling vaccines in the event of equipment failures.**
- **Preparing insurance for vaccines.**

4.3 Integrated Outreach Service Delivery

A 2012 World Bank study (Jacobs et al., 2012) assessed the factors affecting delivery of MCH services during vaccination outreach in six districts of three provinces. Through 58 in-depth interviews with representatives of PHOs and DHOs, health center staff and village health volunteers, it was found that the regularity and frequency of outreach sessions and the number of integrated vaccination or MCH services varied widely between sites.

Availability of external financial and technical support was the major determinant of optimal delivery of integrated services. It was found that the areas with the most effective outreach activities appeared to be those in which regular supportive supervision and monitoring were provided, either by PHO or DHO staff, although most noticeably by staff of external projects or of the hydropower plant. Supervision tended to be conducted at quarterly intervals and was subject to the availability of funds, except for staff members of facilities supported by external agencies. Well-performing vaccination services appeared to be those benefiting from regular, intense supervision.

To better understand the implementation on the ground of immunization service delivery, a rapid field assessment was conducted by the World Bank in four priority provinces in December 2016. The field assessment focused on four main areas to: (i) better understand the service delivery of routine EPI outreach and integrated outreach sessions; (ii) assess the differences and bottlenecks of these outreach sessions; (iii) explore the possibility of combining the two outreach sessions; and (iv) provide recommendations to improve and, if possible, combine the outreach sessions.

The rapid field assessment was carried out in 20 health centers in eight districts sampled from two northern provinces (Oudomxay and Phongsaly) and two southern provinces (Savannakhet and Attapeu). The intention of sampling health centers from two northern and two southern provinces was to compare any similarities and/or differences between the two regions. The findings from this rapid field assessment cannot reflect the implementation of outreach sessions by all health centers nationwide, but can provide an on-the-ground insight into how EPI and integrated outreach are conducted in those priority provinces.

4.3.1 Immunization Outreach and Integrated Outreach Operations

Due to the country's terrain, sparse population and ethnic diversity, most of the vaccination services since the establishment of EPI in Lao PDR in 1982 have been provided using outreach sessions of four rounds per year. The later introduction of integrated outreach intended to expand on the existing immunization outreach by adding essential MCH services; however, the implementation of these outreach sessions is often done in parallel. One of the first distinctions is how the two outreach sessions are budgeted, disbursed and reimbursed. All of the sample health centers in Oudomxay, Phongsaly and Savannakhet (but not those in Attapeu) implemented a separate reimbursement mechanism for immunization and integrated outreach sessions.



Although the exact amount provided to each health center varies, routine immunization outreach incentives for the health care staff conducting outreach sessions include petrol and a national vaccine incentive per shot (Table 4-4); however, integrated outreach receives the same amount of petrol and, instead of a vaccine incentive, staff receive a per diem for each village visited. Staff in one health center in the south (Savannakhet province) explained: “EPI outreach gets petrol (200,000-300,000 kip per round) and an immunization incentive about 100,000-200,000 kip but for integrated outreach we get petrol (which is the same) and a per diem of 60,000 kip per village for two people but we don’t get immunization incentive”. This was further supported by one health worker in Phongsaly province: “During EPI campaign day the health center would receive 100,000 kip per village per day for two people for all villages. In addition, we get petrol of about 500,000 kip per round, which is the same as the routine EPI outreach. The difference in routine EPI outreach is we don’t go to villages in Zone 1, and only go to villages in Zones 2 and 3 and we get per diem of 60,000 and 100,000 kip per village respectively. If we combine routine EPI with campaign, then we only get per diem and petrol but not incentive per shot.” Similarly, staff in a health center in the north (Oudomxay province) reported: “For routine EPI outreach then you would only get vaccine incentive and petrol but not per diem, but if you go for growth monitoring twice a year or EPI campaign then you get per diem and petrol but not vaccine incentive. We got 1,025,000 kip for 13 villages for EPI campaign outreach, which includes petrol and per diem for health staff”.

Table 4-4: Immunization Service Incentive

Vaccine Service	Incentive (in LAK)
Incentive for full immunization to central or provincial hospital for fully immunized child prior to one year of age only (Fully immunized means: HepB-0, BCG, 3 doses of OPV, Penta, PVC3 and MR)	10,000 /fully immunized child
BCG	5,000/shot
Penta 1 + OPV1 + PCV 1 including child check-up	10,000/shot
Penta 2 + OPV2 + PCV 2 including child check-up	10,000/shot
Penta 3 + OPV3 + PCV 3 including child check-up	15,000/shot
DTP 1	10,000/shot
DTP 2	10,000/shot
DTP 3	15,000/shot
MR including child check-up	15,000/shot
Cost for travel for outreach	30,000/village
Incentive for Village Health Volunteers (child received vaccine before one year of age)	10,000/child in village
Travel cost for health worker to go to village to provide HepB to new born (within 24 hours)	30,000/child
Auditing: For checking the vaccination record of children in every quarter (4 times/year/village)	- Travel cost: 20,000/village - Checking cost: 5,000/one target

Source: MoH 2014a.

This vaccine incentive is reimbursed based on performance, which is reported quarterly for actual numbers and types of vaccines used. This method of reimbursement can also be the main contributing factor to ensure immunization outreach is conducted regularly. This assessment confirmed that all 20 health centers interviewed were able to carry out the minimum of four routine EPI outreach sessions per year in 2016 according to MoH guidelines, with almost two-thirds of the sampled health centers conducting monthly EPI outreach sessions. In addition, many health center staff reported using health center operating costs and RDFs to support EPI outreach activities when budget allocations were delayed or even using their personal funds to implement the immunization outreach activities first and then using the report to get funds reimbursed monthly.

Conversely, integrated outreach budgets are often provided as a quarterly lump sum, including petrol and per diem, as input based, thus implementation is dependent on the timeliness of the annual budget. This is illustrated by staff in one health center in Oudomxay province reporting: *“We get integrated nutrition budget per year that we divide into two rounds, so about 1.38 million kip per round for per diem and petrol (that we did in July and November), we only do it after district health sends us the budget first because if we do this work the district health might not reimburse us. When we go for integrated nutrition work we do growth monitoring and distribute Vitamin A and deworming tablets”.*

Some districts allocate per diems by village and not by person; this is then divided according to the number of people conducting outreach sessions. For example, if the per diem is LAK 100,000 per village, two staff would receive LAK 50,000 each; however, if they are doing integrated outreach with four staff then they would only receive LAK 25,000 each that day. Furthermore, unlike EPI outreach, integrated outreach has no performance incentives so, unfortunately, when workload increases, this activity is often not prioritized. As staff in one health center in Phongsaly province reported: *“In 2016 we didn’t do integrated outreach, we only did EPI campaign seven rounds as a priority which is giving out Polio vaccination to women and children, we only included growth monitoring once in October”.* Similarly, staff in another health center in Oudomxay province recalled: *“This year (2016) we didn’t do any integrated outreach because district health told us to only do Polio and national EPI campaign”.*

Nevertheless, six sampled health centers in Attapeu province were able to combine funds allocated for immunization and integrated outreach to maximize the visits and reduce workload for the health care staff. Even within the same province, however, the budget allocations differ by district as indicated by one of the health care staff: *“On average we would get 1-2 million kip per round and it differs depending on school terms as we provide immunization at schools. DHO would always make our budget plan, we [health center] don’t do it. The budget includes 50,000 kip per diem per person, petrol is 10,000 kip per liter per km as for immunization incentive per shot, we don’t get any. It’s been like this in our district for the past two years”.* As a result, variations in budget allocations, mechanisms and timeliness of disbursement directly impact the implementation of outreach services.

4.3.2 Gaps in Understanding the Definition of Integrated Outreach

All health center staff in the sampled provinces were able to correctly and confidently define immunization outreach as the provision of vaccination services to women of reproductive age, pregnant women and children. On the other hand, staff in four health centers could not provide any definition of integrated outreach, while the remaining health centers generically defined it as EPI complemented by some other MCH service(s).

When asked the difference between integrated outreach and comprehensive integrated outreach, none of the staff in 20 sampled health centers was able to classify or list the essential and comprehensive package according to MoH guidelines. Staff in one health center in Attapeu province simply distinguished the two as: “EPI and one other MCH activity and EPI and all MCH activities”. This lack of understanding explains one of the main reasons for the disparity of services provided under the integrated outreach activity. As staff in one health center from Oudomxay province explained: “The integrated outreach work we do is EPI as the main activity and each month we add a different activity—for example, this month was EPI and ANC and next month will be EPI and growth monitoring, we do this for all villages”. This incorrect definition of services is reflected in the yearly reporting of achievement of four integrated outreach sessions in the four sampled provinces in 2016 (Table 4-5). It should be noted that Oudomxay province reported achieving four integrated outreach sessions in all Zone 2 and 3 villages.

Table 4-5: Number of Villages Achieving Four Integrated Outreach Sessions in 2015-16

Provinces	Total Number of Health Centers	Total Number of Villages 2015-16		Number of Villages Achieving Target	
		Zone 2	Zone 3	Zone 2	Zone 3
Oudomxay	50	160	127	160	127
Phongsaly	40	97	313	33	37
Savannakhet	150	459	274	405	192
Attapeu	33	51	57	27	30

Source: MoH 2016c.

Misconceptions about services in integrated outreach sessions are another reason preventing many health centers from implementing EPI and integrated outreach together. Staff in one health center in Phongsaly province claimed: “Two people doing integrated outreach isn’t enough, we need at least three to four people because there’s a lot of activities for integrated outreach”. Staff in another health center in Savannakhet province explained: “Services provided in integrated outreach is more than of EPI outreach, we don’t have enough staff because we need at least three people each time”. Staff at another health center from Savannakhet province also stated: “It’s too complicated, too much work, we can’t do all of the activities, it’s difficult because it also requires lots of equipment and we don’t have enough staff or vehicles”. The sampled 20 health centers had an average of six staff with a minimum of four and up to ten staff per health center and at least one female staff.

In acknowledging that service packages for each health center depend on the supply/equipment, skills and number of staff in each health facility, in late 2015, MoH introduced Operational Implementation Guidelines for Health Workers on Microplanning for Delivery of Integrated Mother and Child Health and Immunization Services. This microplanning manual provides guidelines for the service delivery package for integrated outreach based on the number and skill of staff (Table 4-6).

Table 4-6: Integrated Outreach Guidelines for Minimum Service Delivery Package Based on Available Human Resources in Health Facilities

Availability of Human Resources in Health Facility	Children <5 yrs	Women of Reproductive Age (15-45)	Pregnant Women	Postpartum Women	Health Education	District Support
Health center of <2 staff.	Child vaccination; Vitamin A & deworming (twice a year).	Tetanus and diphtheria toxoids (Td); Family planning advice and commodities.	Td; Iron folic acid (60+30 tablets); Deworming (3rd trimester); Birth planning.	Td; Iron folic acid (42 tablets); Deworming; Family planning advice and supplies.	Share information on Free MCH.	1-2 district staff, (including 1 midwife) must attend all sessions.
Health center of >2 staff, no midwife.	Child vaccination; Vitamin A & deworming (twice a year).	Td; Family planning advice and commodities.	Td; Iron folic acid (60+30 tablets); Deworming (3rd trimester); Birth planning; Physical ANC examination.	Td; Iron folic acid (42 tablets); Deworming; Family planning advice and supplies.	Share information on Free MCH.	District or Health Center midwife must attend all sessions.
Health center ≥2 staff, more than one midwife.	Child vaccination; Vitamin A & deworming (twice a year).	Td; Family planning advice and commodities.	Td; Iron folic acid (60+30 tablets); Deworming (3rd trimester); Birth planning; Physical ANC examination.	Td; Iron folic acid (42 tablets); Deworming; Family planning advice and supplies.	Share information on Free MCH.	Not applicable.
District team, where no health center access.	Child vaccination; Vitamin A & deworming (twice a year).	Td; Family planning advice and commodities.	Td; Iron folic acid (60+30 tablets); Deworming (3rd trimester); Birth planning; Physical ANC examination.	Td; Iron folic acid (42 tablets); Deworming; Family planning advice and supplies.	Share information on Free MCH.	Not applicable.

Source: MoH 2015.

The purpose of a microplanning guide is for health center workers to work together with district health officers to develop a work plan to suit the context of each health facility.

Some of the main questions the microplanning exercise will answer include: (i) who is the target population; (ii) what are vaccine and essential drugs logistics and stock; (iii) who, where and when as well as what services will be provided during outreach sessions; and (iv) an estimated budget needed for each outreach activity.

Although most of the 20 health centers sampled had heard of microplanning, only the sampled health centers in the two northern provinces could explain and had previously done or been involved in microplanning. Staff in one health center in Phongsaly province highlighted one of the benefits of microplanning as: *“Microplanning is beneficial in identifying the target population, we can monitor our progress every month. In the past we would overestimate the target population based on census formula but in reality the number of births is few because there’s many people adopting family planning so there’s not that many children born.”* Staff from another health center in Oudomxay province reported: *“If we didn’t get trained and we didn’t do microplanning, we wouldn’t know our target group, have evidence on progress of our work. For example, if we have achieved 30 percent of the work so we know what’s left to achieve 100 percent.”*

Although most of the sample health centers in the two southern provinces rely on the plan created by the DHO, those who received training did not implement it once they returned to their health centers. As staff in one health center in Attapeu explained: *“I think we got trained but we don’t understand, don’t remember so we didn’t do.”* Staff from another health center in Savannakhet stated: *“Two of our staff went to get trained but they didn’t remember and so didn’t do; only the chief of the health center does the plans and he keeps it and does not share with his staff.”*

Lack of appropriate and necessary medical tools and equipment to carry out integrated outreach is another hindrance to providing an essential and comprehensive package of services during outreach. Important items for integrated outreach which were not available in the sampled health centers included: appropriate scales; height boards; fetal Doppler; MCH pink book; and IEC materials for health education and nutrition counseling. Many health centers interviewed reported borrowing height boards from the DHO, borrowing scales from villagers and not bringing medical tools and equipment during outreach since they only have one set at their facility.

A recently adopted Quality Supervisory Checklist by MoH in early 2016 supported by the World Bank Health Governance and Nutrition Development Project (HGNDP) has been rolled out as a tool to regularly monitor and assess health facility readiness to deliver essential health services at the district hospital and health center (Table 4-7). The checklist assesses 11 components and provides district hospitals and health centers a score that DHOs and PHOs can use as an indicator to map out a health facility’s service readiness and assist in prioritizing and mobilizing funds for improvement. Items assessed include functional equipment for ANC (for example, Doppler sound detector or fetoscope, scales, and tape measure) and at least 10 empty MCH pink books.

Table 4-7: Quality Supervisory Checklist for PHO and DHO to Supervise Health Centers

	QUALITY COMPONENTS	MAXIMUM AVAILABLE POINTS	SCORED POINTS
1.	Administration and Finance	43	
2.	Hygiene and Sanitation	36	
3.	Consultation Room	49	
4.	Inpatient Room	31	
5.	Clinical Care – Child Health	50	
6.	Clinical Care – Maternal Health	64	
7.	Clinical Care – Infectious Diseases	26	
8.	Clinical Care – NCDs	12	
9.	Laboratory	27	
10.	Pharmacy	45	
11.	Health Management Information System	17	
	TOTAL	400	

Source: MoH 2016d.

Note: Medical equipment, tools and administrative MCH books needed to provide each service are embedded under each quality component score (for example, consultation room, clinical care).

The application of the Quality Supervisory Checklist has yet to generate its desired results. Some health centers interviewed were not sure if they have been evaluated as the district health officer who came for supervision did not share the results with them nor inform them of their score. Other health centers did receive a score and identified areas of improvement, however, were not given guidance on how to address them as staff in one health center in Oudomxay recalled: *“District and provincial staff came to assess our health center and we got 86 percent in October; they told us we need to have a fence, waste pit for non contaminated objects etc., but they didn’t tell us what was the purpose of the assessment, only told us to address the issues ourselves by using funds from the drug revolving fund or ask for contributions from the villagers but no guidance on how to do it, if there’s any budget support from DHO/PHO, how to plan and budget etc.”* Similarly, as staff from one health center in the South, Savannakhet province, explained: *“It was ok I guess (got 32 percent) because we had a lot of missing items, about 10, we have tried to ask for funds to improve the facility but didn’t receive much information back.”*



Ultimately, the lack of feedback, support, and clear guidance from district and provincial health officers was another, if not the key, factor impacting on integrated outreach implementation.

All sample health centers interviewed suggested having clear guidelines from PHO and DHO on: (i) content of integrated outreach; (ii) the essential and comprehensive service package; (iii) clear planning, operational and implementation processes; (iv) budget, incentives and performance indicators; and (v) reporting, monitoring and supervision. This can be illustrated by staff in one health center in Oudomxay province who explained: *“We don’t understand clearly what integrated outreach is and what we need to do, mostly we only provide immunization and ANC... we didn’t do the complete package ... because the district didn’t tell us specifically that it needed to be done four times...they didn’t tell us clearly what needed to be included in integrated outreach”*. Resonating this message, the staff at another health center in Phongsaly province said: *“We would like to receive training on how to carry out integrated outreach and its essential services because we’ve never received any formal training, only advice...we would especially like to have someone from MCH and Immunization Unit to train and also demonstrate how it’s carried out in the village at least once.”* Other areas of hands-on mentoring support needed are how to provide counseling, and to deliver health education and promotion in ethnic villages.

An example of where clear guidance from the PHO has led to the joint implementation of EPI and integrated outreach is in Attapeu province where the PHO and DHOs announced a policy that makes it compulsory to combine MCH services with immunization outreach.

As explained by staff in one health center: *“The policy set out by provincial health department and DHO is for MCH services to be integrated and implemented with every routine immunization outreach for effective and efficient use of funds. Providing integrated outreach is more beneficial because we can do a lot of things in one visit, saves time and funds, easy for staff and doesn’t bother the villagers often.”* Staff at another health center also added: *“This policy was from PHO and DHO...because health centers have limited staff and small budget and staff also prefer not to do too many outreach sessions.”*

Equally important is close monitoring, feedback and supervision by the PHO and DHO of health center performance and ensuring that services of the highest quality are delivered.

An initiative introduced in Phongsaly province to reward and acknowledge high performing health centers creates an incentive for them to provide essential services. As explained by staff in one health center: *“Each health center is competing with other across Phongsaly province, our health center is one of the best, we’ve received a certificate of appreciation and medal of achievement so even with no or limited budget we need to try hard to not fall behind and keep up our reputation”*.

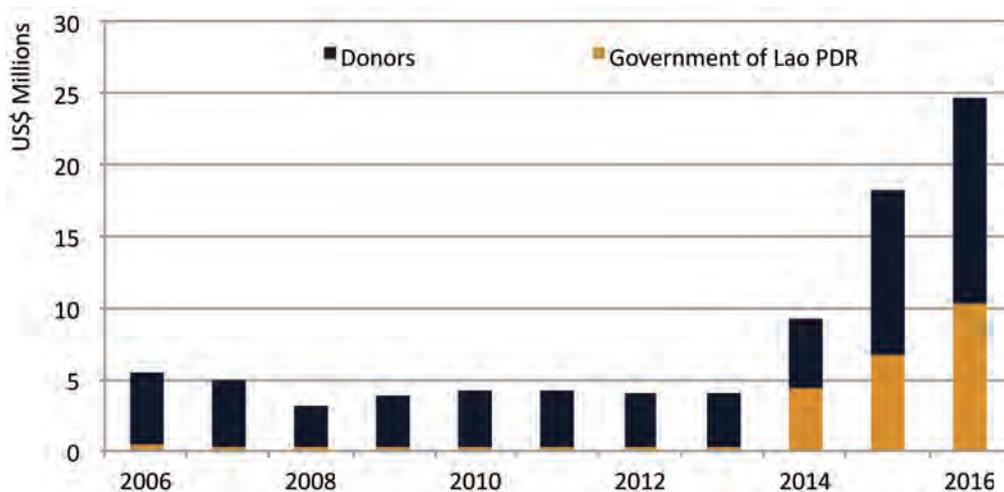
4.4 Immunization Financing

Data on financing for immunization is available in the public domain from mainly two sources: from Gavi (Annual Progress Reports) and WHO/UNICEF (Joint Reporting Form). However, the data refer to different bases (total immunization costs to Gavi, costs for routine immunization to WHO/UNICEF), are reported and available for different timeframes (up to 2014/2016), and exhibit significant differences. For example, the costs for routine immunization as reported by WHO/UNICEF do not include shared health system costs—in the case of Lao PDR, these are mostly personnel costs—they are therefore less than the overall costs for the immunization program reported to Gavi. For consistency this reports draws on expenditure data from WHO/UNICEF (2017b) unless indicated otherwise.

4.4.1 Overall Spending on Routine Immunization

Overall spending on routine immunization has increased significantly from less than US\$5 million annually in the 2007 to 2013 period to US\$24.8 million in 2016 (Figure 4-6), according to the Joint Reporting Form by WHO/UNICEF (2017b). This corresponds to 12.4 percent of total government expenditure on health in 2016. Since 2014, the share of routine immunization spending that was financed by GoL increased significantly (discussed below), therefore the share of government-financed expenditure for routine immunization increased from around 0.2–0.4 percent of total government expenditure on health between 2011 and 2013 to 5.2 percent in 2016.

Figure 4-6: Overall Expenditure for Routine Immunization (2006–16)



Source: WHO and UNICEF 2017b.



4.4.2 Unit Cost of Immunization Services

The cost of vaccines (including traditional, underused, and new)²⁸ accounted for 45 percent of total expenditure on routine immunization in 2016. The country has expanded the immunization coverage, made efforts to strengthen routine vaccinations in hard-to-reach areas and underserved populations, introduced new vaccines against measles and rubella in 2011 and HPV (demonstration project) and pneumococcal (PCV-13) vaccines in 2013 and plans to introduce new vaccines (routine HPV and rotavirus). To date, the increased spending has largely been made possible due to funding from Gavi.

Table 4-8 summarizes financial indicators for immunization in Lao PDR from 2006 to 2016 as estimated by WHO and UNICEF. The most important feature is the remarkable increase in expenditure since 2014 compared to the preceding years, both in terms of total expenditure and in expenditure financed domestically. Total expenditure on routine immunization increased more than six fold to US\$24.8 million from an average of around US\$4 million in preceding years. 42 percent of this expenditure was financed by GoL in 2016 (up from an average of around 7 percent before 2014).

Expenditure on vaccines has increased more than fourfold between 2013 and 2016, with the share of expenditure on vaccines that are financed domestically increasing from under 10 percent in previous years to 24 percent in 2016. This is equivalent to a more than tenfold increase in absolute numbers. Overall, the costs of routine immunization per fully immunized child in 2016 increased to US\$160 (US\$67 financed by GoL) from US\$55 in 2014.²⁹

Table 4-8: Financial Indicators for Routine Immunization (2006–16)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Government Expenditure on Vaccines (US\$)	0	58,000	100,000	103,741	100,000	113,827	200,000	200,000	570,385	1,956,767	2,665,818
Total Expenditure on Vaccines (US\$)	446,154	446,154	1,111,111	1,392,497	2,000,000	1,954,584	2,000,000	2,460,095	4,770,776	8,465,767	11,237,885
Total Expenditure on Vaccines Financed by Government (%)	0	13	9	7	5	6	10	8	12	23	24
Government Expenditure on Routine Immunization (US\$)	433,867	295,000	350,000	269,388	320,000	285,000	250,000	250,000	4,473,785	6,747,667	10,321,484
Total Expenditure on Routine Immunization (US\$)	5,423,338	4,916,667	3,181,818	3,949,971	4,289,200	4,157,368	4,000,000	4,000,000	9,244,561	18,254,640	24,754,374
Total Expenditure on Routine Immunization Financed by Government (%)	8	6	11	7	7	7	6	6	48	37	42

Source: WHO and UNICEF 2017b.

²⁸ Traditional vaccines include BCG, HepB (birth dose), Pentavalent, OPV, MCV and TT; DTP-HepB-Hib is considered as an underused vaccine in Lao PDR; new vaccines are PCV, JE, IPV, and HPV.

²⁹ The unit costs of routine immunization per surviving infant in 2016 include the personnel costs, operational costs (for example, electricity cost for cold-chain maintenance, water and utility bills) while these costs were not included in the costs in previous years.

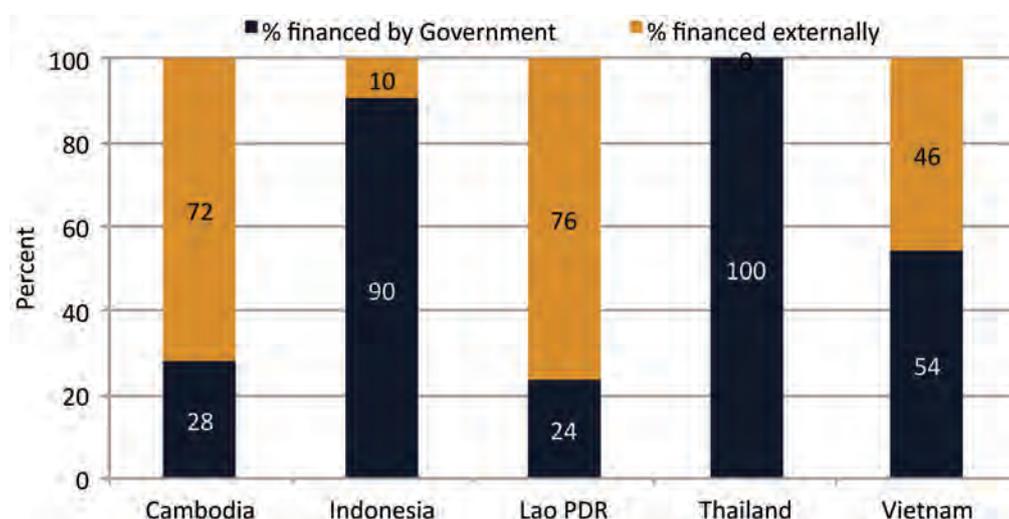
There is a large variation in spending on vaccines per targeted child in the region, ranging from US\$10.4 in Indonesia to US\$69.5 in Lao PDR. The comparably high expenditure in Lao PDR can be explained in part by the high costs for the recent introduction of pneumococcal vaccine which accounted for 43 percent of total expenditure for vaccines (followed by DTP-HepB-Hib which accounted for 29 percent of total expenditure for vaccines). Expenditures for vaccines are expected to increase further due to the introduction of HPV routine and rotavirus vaccination. Since Lao PDR provides some vaccinations for older age groups (HPV and Tetanus and Diphtheria Toxoid) it is also relevant to look at costs for vaccines per capita of the whole population. Lao PDR spent US\$1.66 per capita on vaccines in 2016, also more than other countries in the region. The percentage share of these costs financed by GoL was 24 percent and has increased from a very low starting point but is still below the regional average (Table 4-9 and Figure 4-7).

Table 4-9: Spending on Vaccines (2016)

Country	Total (US\$)	Per Targeted Child (US\$)	Per Capita (US\$)	Financed by Government (%)
Cambodia	7,351,240	20.0	0.5	28
Indonesia	51,744,306	10.4	0.2	90
Lao PDR	11,237,885	69.5	1.7	24
Thailand	41,041,061	57.7	0.6	100
Vietnam	19,417,981	12.3	0.2	54

Source: WHO and UNICEF 2017b; UNPD 2017.

Figure 4-7: Spending on Vaccines by Source (%) (2016)



Source: WHO and UNICEF 2017b.

4.4.3 Sources of External Financing

Immunization services are offered free in Lao PDR but the immunization program has been largely dependent on funding from donors.³⁰ Several partners provide support to NIP via a range of program activities, from providing financial support to implementation and technical support at both national and provincial levels. In the past, financing of vaccines in Lao PDR was fully dependent on donors. Historically, Japan International Cooperation Agency (JICA) had funded all vaccines; however, JICA has been replaced with donor funding from other development partners since 2007. The sources of financing in 2013-14 include Gavi, WHO, UNICEF, PATH, CDC, KOICA, and LuxDev (Table 4-10). The largest external funders of the program are Gavi (covering 33 percent of the program in 2013 and 19 percent in 2014), UNICEF (10 percent in 2013 and 18 percent in 2014), and CDC that contributes 30 percent of the program in 2014. For the 2016 to 2020 period, the World Bank and ADB will probably provide additional resources.

Table 4-10: Sources of Financing for Lao PDR Immunization Program (2013-14)

Funding Body	2013		2014	
	Amount (US\$)	% of Total	Amount (US\$)	% of Total
GoL	2,302,222	41.4	3,840,820	27.7
Gavi	1,815,500	32.7	2,575,765	18.5
WHO	467,402	8.4	701,113	5.0
UNICEF	561,566	10.1	2,486,096	17.9
PATH	190,000	3.4	125,000	0.9
LuxDev	100,000	1.8	0	0
KOICA	120,000	2.2	60,000	0.4
US CDC	0	0	4,122,000	29.6
Total	5,556,690	100	13,910,794	100

Source: Gavi Alliance 2014 and 2015.

Overall, donors accounted for 76 percent of the total spending on immunization in Lao PDR over the 2010 to 2014 period. The largest share of this (22 percent of total spending between 2010 and 2014 and 29 percent of external spending) was provided by Gavi, followed by UNICEF (20 percent of total spending), the CDC (18 percent), and WHO (14 percent). The other donors (PATH, LuxDev and KOICA) mainly paid for traditional vaccines—a cost category that has since been assumed by the GoL. For the 2016 to 2020 period, the World Bank and ADB will provide additional resources that can be used for operational costs. Spending is expected to increase further in coming years, driven mainly by a higher share in domestically financed vaccine procurement and increased routine operational costs due to the expansion of coverage and services in remote areas and for underserved populations and the additional two new vaccines (HPV and rotavirus) planned from 2018.

³⁰ This section draws on data reported in the Gavi Annual Progress Reports which are available up to 2014.

4.4.4 Sources of Domestic Financing

GoL pays for vaccines, injection supplies, personnel salaries, transportation, maintenance and overheads, and program management. GoL has recently begun financing vaccines and has increased its vaccine financing share (traditional and cofinancing of Gavi vaccines.) Vaccines were procured with financial support from JICA until 2007 and then by UNICEF and LuxDev. The government started cofinancing Gavi-supported vaccines in 2009 while traditional vaccines were still financed from external sources. In 2012, GoL began financing traditional vaccines and has since rapidly increased financing for both traditional vaccines and NVS.

While GoL was increasing its expenditures on vaccines, the total amount spent on vaccines doubled with the introduction of pneumococcal vaccine in 2013. As a result, the proportion of total vaccine financing that GoL was paying did not change significantly. It does show, however, that partners other than Gavi were decreasing their expenditures on traditional vaccines. In 2014, UNICEF decreased its spending on traditional vaccines by 29 percent and LuxDev no longer finances vaccines.

The Lao PDR Situation Analysis (WHO, 2016), found that cofinancing of Gavi NVS constituted 0.1 percent of Lao PDR MoH expenditures in 2013 and 0.2 percent in 2014 (if MoH expenditures remain at the level of 2013). The Situation Analysis also found that total financing of vaccines from domestic sources was 0.1 percent from 2008 to 2012 and increased to 0.25 percent in 2013 and 0.56 percent in 2014; and, that if GoL covers costs of all traditional vaccines plus fulfills cofinancing commitments, it will constitute 0.60-0.65 percent of the health care budget (domestic funding).

Box 4-1: Introduction of New Vaccines

The decision to introduce new vaccines into the national immunization schedule is based on multiple considerations, including affordability and cost-effectiveness, the burden of disease from the conditions targeted by the vaccine, strengths and weaknesses of the national immunization program, the service delivery modality required to deliver the new vaccine and the availability, price, and safety of the vaccine.

Since 2009, Lao PDR has introduced several new vaccines into the immunization schedule: the Pentavalent vaccine, a combination of DTP-HepB-Hib (2009), Measles Rubella (MR) (2011), Human Papilloma Virus (HPV) (demo) and pneumococcal (PCV-13) (2013), and Inactivated Polio Vaccine (IPV) and Japanese Encephalitis (JE) vaccine (2015). NIP currently plans to introduce Measles Second Dose in 2017 and to phase in nationwide HPV vaccination. NIP is also deliberating the introduction of rotavirus vaccination.

The introduction of new vaccines to the routine immunization schedule poses a number of challenges to any immunization program - for example, because of a more diversified target population, the necessity of additional visits to comply with the new vaccination schedule, and higher demands on infrastructure and staff. Experiences show that the decision to introduce a new vaccine should be contingent on a country's readiness. Otherwise countries face implementation problems, especially in the first year, such as stock outs, poor management, unclear eligibility, in-



adequate documentation, and shortage of well-trained staff. Introduction of a new vaccine may also weaken the existing immunization program by overburdening the service delivery system and creating confusion in first line staff about what vaccine to provide how, when and to whom, and similar confusion is likely among even the well-informed parents about what vaccinations are due for their children and when.

Furthermore, most new vaccines are considerably more expensive than traditional vaccines. Although international assistance and cofinancing mechanisms might be available in the immediate term, the long-term financing needs for new vaccines especially from domestic sources—has to be evaluated carefully against competing needs in the sector. Lao PDR cMYPT 2016–20 reveals that the costs for NPV now represent the major cost-driver of NIP. While the projection of costs for new vaccines is pretty straightforward, the estimation of collateral costs is not. Generally, the introduction of new vaccines incurs substantial additional capital and recurrent costs for human resources, additional transportation, cold storage, training, equipment, and maintenance. This is especially the case for HPV which will require new delivery modalities to reach adolescent girls both in and out of school. On the other hand, the introduction of new vaccines offers a good opportunity to foster partnerships with donors, NGOs and civil society, and to mobilize popular demand for all immunization and other basic health services. This is especially the case for HPV which targets adolescent girls; if, in fact, a decision is made to introduce the HPV vaccine then it should be included as part of a combined service package including SRHR, nutrition and HPV for this target group, who at present receive little attention from the health services.

Between October 2015 and January 2016 Lao PDR had a number of cases of vaccine-derived polio. This occurs in populations with low immunity resulting from low coverage of OPV and IPV. The MoH immediately declared the outbreak a public health emergency. With substantial assistance from WHO the outbreak is currently under control and surveillance is substantially improved. As part of the global end game plan for polio eradication, WHO called for all countries to strengthen routine immunization programs and replace trivalent OPV (tOPV) with bivalent OPV (bOPV) in 2016, thereby eliminating polio. Simultaneously all countries were advised to introduce at least one dose of Inactivated Poliovirus Vaccine (IPV) into their routine immunization schedule before the end of 2015. In Lao PDR the rollout across provinces has been slower than expected. The one-dose IPV vaccination schedule is not being followed (IPV coverage of < 50 percent of Penta-3 coverage in most areas) and health workers are reporting poor acceptance of multiple simultaneous injections (PENTA3/PCV3/IPV) and both health workers and parents have little understanding of the need for both OPV and IPV. For now, the country has adequate IPV stocks that should last several months of use, partly on account of this slow rollout. The rollout of IPV illustrates the vital need for institutional strengthening including the dimensions of HR capacity and effective and efficient outreach.

4.4.5 Current and Projected Financing for Immunization

This section is built on the assumptions and cost projections from the Lao PDR 2016 cMYP (Lao PDR, 2016). These projections are based on the cost analysis of the latest year for which full costing and financing information was available (2014). The cost projections in the cMYP comprise the costs for all vaccinations included in the immunization schedule in 2014 as well as the phasing in of HPV routine immunization; they do not include the costs for the introduction of rotavirus vaccination that is currently under consideration.

The total costs of the immunization program in Lao PDR from 2016 to 2020 are projected to be US\$90.5 million—fluctuating around US\$18 million annually (Table 4-11). Most of the increase in annual costs over the projection period compared to the baseline year (2014, US\$16.3 million)³¹ is explained by the intended scale-up of immunization coverage rates.

In the Lao PDR 2016 cMYP, the projected resource need, the expected funding, and the respective funding gaps are estimated and summarized in Table 4-11. The largest share of the required resources is expected to be financed by GoL. Direct payments by GoL and copayments of Gavi vaccines are projected to account for 37 percent of the total planned expenditures. Development partners have committed to providing 21 percent of the projected costs so far, with Gavi representing the largest share (18.5 percent of total expenditure). Over the whole projection period, there remains a funding gap of around US\$38 million (42 percent of the total resource need). Annually the gap is projected to fluctuate between US\$7 million and US\$8 million. With the decline of external financing, increasing public domestic financing for the immunization program as well as other key health programs becomes a real challenge in ensuring financial sustainability of priority health programs in the coming years.

Table 4-11: Projected Financing for Immunization by Sources and Gaps (2016–20) (US\$)³²

	2016	2017	2018	2019	2020	2016-20
Total Projected Expenditure	17,597,061	18,630,795	17,922,736	18,022,675	18,039,777	90,483,044
Government of Lao PDR	5,341,633	5,071,369	5,540,462	4,880,776	6,078,174	26,912,414
GoL co-financing of Gavi vaccine	455,736	748,960	867,141	1,724,171	2,664,863	6,460,870
Gavi (NVS)	2,879,956	4,008,003	3,922,307	3,325,354	2,644,520	16,780,139
UNICEF	450,000	0	0	0	0	450,000
WHO	386,000	386,500	0	0	0	773,000
Gavi Grant	511,000	450,157	0	0	0	961,703
Secured Funding	10,025,370	10,664,989	10,329,909	9,930,301	11,387,557	52,338,126
Funding gap (secured funding only)	7,571,691	7,965,806	7,592,827	8,092,373	6,922,221	38,144,918

Source: Lao PDR 2016.

Note: Differences in subtotals are due to rounding.

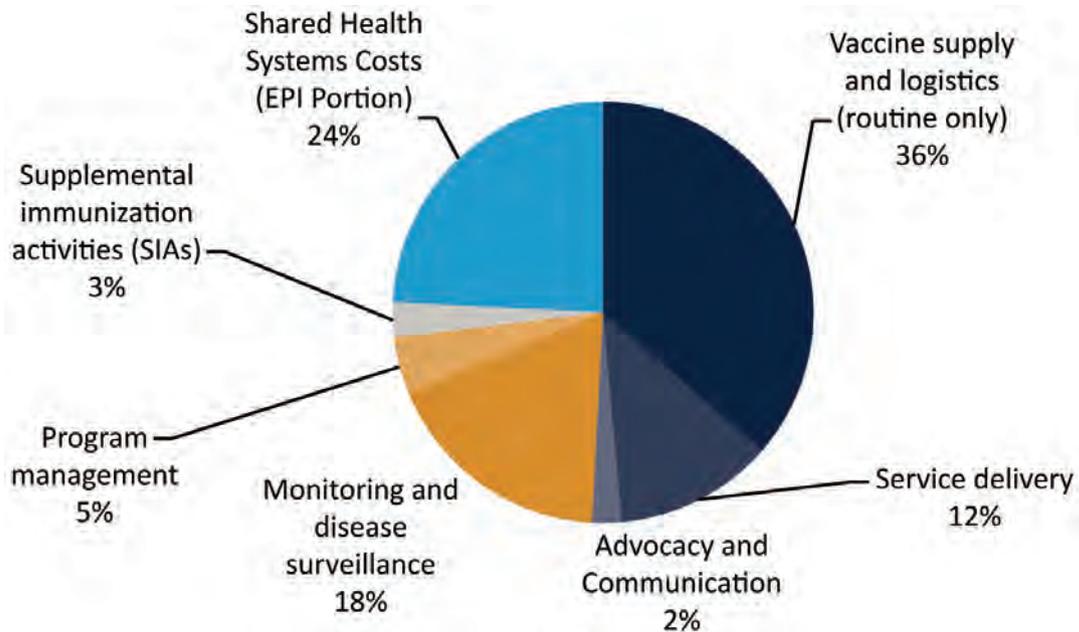
³¹ The cost of the immunization program reported in cMYP includes the shared health system costs. It does not, therefore, match with the costs reported in the Gavi Annual Progress Reports in Table 4-10 and Figure 4-6.

³² Cofinancing requirements for Gavi vaccines have been estimated lower in newer Gavi forecasts: US\$750,000 (2018), US\$1.3 million (2019) and US\$2.1 million (2020).



Compared to the years before 2014, the share of expenditure on vaccines over the 2016-20 period is projected to decline (36 percent of total resource needs) (Figure 4-8). Better forecasts of vaccine requirements are a contributing factor in this decrease. In absolute numbers, however, the costs for this component are projected to increase because of higher demands due to a growing number of births until 2020. The share of other component costs are projected to increase because of the strategic decision to focus on the subnational level and to increase funding on improvement of program management, service delivery, monitoring and surveillance.

Figure 4-8: Projected Resource Needs for Immunization by Program Category (2016–20)



Source: Lao PDR 2016.



When combined with other cost pressures from within the health sector and beyond, the phase of transition requires careful planning to ensure sustainable domestic resources for immunization during the transition period and beyond. Given the need to plan carefully and ensure sustainable financing for UHC in the context of transitions, it is important that the assumptions made in the cMYP process and the projections for resource requirements are accurate and updated as necessary.



4.5 Suggestions for Way Forward

The immunization program of Lao PDR is faced with two immediate needs: (i) to ensure adequate financing for the immunization program within the context of declining external funding; and (ii) to reduce inequities in access to immunization and ensure high coverage in all parts of the country and socioeconomic sections of society. It is, therefore, necessary to mainstream as many aspects of NIP as possible to reduce operational costs while retaining a focus on quality and equity of access.

Key recommendations for ensuring adequate and sustainable financing for the immunization program include:

- **Ensure sustainable financing for the immunization program in the broader context of sustainable financing for UHC.** Policy options to increase domestic financing to replace the external sources should not be considered by program, but needs to be assessed comprehensively as a domestic resource mobilization for UHC.
- **Assess fiscal space for UHC and evaluate viable policy options to increase public financing for health in an efficient, equitable, and sustainable manner.** Increases in public financing, that is, “fiscal space” for health can potentially be realized through: (i) sustained economic growth and increases in general government revenues; (ii) greater prioritization given to health in government budgets; and, (iii) introduction or expansion of earmarked consumption and income taxes, including social health insurance. Pros and cons as well as viability of policy options to increase fiscal space need to be carefully analyzed.
- **Understand existing bottlenecks in increasing public financing for health.** Efficiency in health spending can be one of the most important factors for realizing fiscal space for health.

Through the HFSA immunization assessment, the following areas were identified for improving efficiency by mainstreaming of EPI activities:

- **Ensure financing for immunization needs to be assessed within the context of sustainable financing for UHC** as part of the overall transition that Lao PDR is experiencing due to declining external financing and shifting towards increased domestic financing and government ownership.
- **Harmonize financial management reporting for EPI and align it with the national accounting system using the government’s Chart of Accounts.**
- **Fully integrate EPI data into the national Health Information Management System (DHIS2) and discontinue separate recording at facilities that would decrease the workload in the field while providing quality data for program management.** The DHIS2 is increasingly providing robust data from all provinces. EPI data is already included in the DHIS2, while the EPI program continues to use a separate recording system. This causes double work at the facility level. Integration will also solve the issue of different reporting dates leading to differences in numbers reported between the two systems.

- **Mainstream supply chain management**, including the supply of EPI commodities into one integrated supply chain management system that uses IT for commodity forecasting and management—at least down to the district level.
- **More specifically merge the supervisory guide for MCH and EPI to increase efficiency and save cost and**
- Ensure adequate Mother and Child Health home records at every level.

Ensure that adequate MCH home records to cover the annual cohort of vaccinated children are locally available. In the context of integrated outreach, studies in Lao PDR (as well as globally) show links between availability of home records for immunization and immunization coverage. This would be a simple and inexpensive means to increase immunization coverage, with the possible external benefit of increasing coverage of other MCH services.

The following areas are identified to increase coverage and reduce inequities:

- **Implement a merger of EPI and MCH services into an integrated outreach service.** The EPI has, until recently, provided separate outreach services every quarter. It has recently been decided to merge EPI and MCH services to create integrated outreach. During field visits it was found that a number of facilities continue to provide separate EPI outreach sessions and that some are only merged with family planning services. Effectively implementing integrated outreach services across the country has the potential to substantially increase availability of EPI as well as MCH services.
- **Provide targeted financial and technical support to districts with low immunization coverage**
- **Conduct operations research to identify the most effective mix of facility-based and outreach services.**
- **Undertake a study on EPI and other basic supply- and demand-side service constraints.**
- **Shift from input-based to performance/results-based planning and financing for greater focus on results.** This shift has been introduced with DFAT financing through the disbursement linked indicators (DLIs) under the World Bank-supported health project which, under the recently approved additional financing includes a specific DLI to incentivize increased immunization coverage in the 50 underperforming districts, to incentivize higher coverage and frequency of integrated outreach services, and to increase non-salary health recurrent expenditure at the district level. The use of performance-based financing to strengthen immunization and other priority services could be further strengthened with contributions from other donors and the government channeling their funds through similar disbursement mechanisms.







Section 5

Policy Recommendations



To make greater progress toward attainment of UHC by 2025 in Lao PDR, an increase in government spending for health services, particularly from domestic revenue sources, is inevitable. This will reduce the financial burden on households and the vulnerability associated with the uncertainty of external financing.

Considerable challenges remain in ensuring not just an increase in the quantum of spending, but to target this increase to reduce OOP spending and reach those who have limited or no access to essential services. At the macro level, this requires a clear government commitment to meet the 9 percent budgetary target both at the central and the provincial level. Domestic resource mobilization will entail an improvement in the overall revenue collection capacity and inclusion of additional sources of revenue to benefit the sector such as earmarked taxation or earmarking of nontax revenue sources—such as from the Nam Theun 2 hydropower project.

At the sectoral level, this includes an increase in the efficiency and effectiveness of spending to ensure that additional health spending achieves the desirable population health outputs and outcomes while ensuring sustainability of financing for health. One essential budgeting and planning exercise for the country would be to undertake systematic priority setting to help decide where limited sectoral resources should be invested. This will involve evidence-based determination and prioritization of the investments yielding the best returns in terms of health outcomes, improved equity, improved financial protection, sustainability and other important health system objectives, as prioritized by the country.

A key focus here would need to be on the defragmentation of financing, implementation and budget execution, and mainstreaming of multiple, often parallel, implementation modalities and social health protection schemes. Addressing fragmentation of financing and implementation of multiple schemes such as the CBHI, HEF and the free MCH program would be an important step in improving efficiency of the system. While the expansion of integrated NHI is a good starting point, a process of gradual merger and functional integration of these various schemes is imperative for effective implementation. The use of pooled and prepaid financing is an important adjunct to ensure that spending results in expanded equitable health service coverage and reduced OOP payments for health.

Effectiveness of spending would be further strengthened through the introduction of results-based planning and, in the longer term, through a transition to results-based budgeting. The latter requires, however, a much-improved financial management and expenditure tracking system than is presently in place. The country also needs to find its own innovations in service organization and service delivery that help it to cut costs and deliver greater value, such as the existing plans to encourage facility-based services for Zone 1, and undertaking outreach for Zones 2 and 3. Mainstreaming of programs also allows multitasking by multiskilled staff, which is difficult to achieve in vertically run programs. Thus, the outreach example above for Zones 2 and 3 can be further undertaken in an integrated manner to deliver immunization, MCH, nutrition and family planning services by multiskilled staff.

From an external financing perspective, one of the major challenges for Lao PDR is to continue expanding the service coverage for the key health programs that have been traditionally financed by donors, and accelerate and sustain the progress toward UHC while effectively managing the transition from external financing. A managed transition is vital for institutional sustainability as external funding reduces. Mainstreaming into one coordinated health system would include reducing the duplication in management and reporting of the different vertical programs such as supply chain management, supervision and health management information systems as was highlighted in the immunization assessment.

Integration of externally funded programs into a well-functioning health system and reduced fragmentation in financing and service delivery is key to ensuring sustainability and enhancing health outcomes.

The UHC package needs to be defined and costed to ensure and sustain financing:

- **Completing the definition of the essential package of services that will be provided to the entire population to achieve UHC:** This has already been initiated, and must include a definition of facility-based services, of community-based services as well as the extent to which facility-based services must be provided through outreach to population groups who do not at present seek services.
- **Costing the delivery of these services:** Costing (staff, drugs, supplies, operations) should reflect the mainstreaming of vertical programs such as immunization, HIV, TB, Malaria into one comprehensive health system to ensure efficiencies of health spending. Such costing would form a basic component of the preparation of a medium-term expenditure framework as a prerequisite for assessing fiscal space and ensure adequate, predictable and sustainable financing for health.
- **Evidence-based and systematic priority setting:** Development of tools should ensure that any service to be provided as part of the essential service package should be evaluated based on its cost effectiveness, supply-side readiness, fiscal capacity, contribution to equity and financial protection, and any other criteria relevant to the country context.
- **Balancing supply-side and demand-side investments:** During this transition, clarity on the mechanism and adequacy of funding through demand-side financing (NHI) and supply-side financing (MoH) for the essential service package is necessary.

Gradual and functional integration of financing, planning and program execution is imperative for successful transition and sustainability.

- **Planning and budgeting to align and integrate all the funding streams and programs at national and subnational level.** Integration of planning and budgeting requires closer coordination between MoH, MoF and MoPI. Within the departments of MoH the role of coordinating all funding streams and programs or projects in line with the overall priorities of the ministry should be clearly defined. Similarly, all funds should be clearly accounted for through one designated department.



- **Mainstreaming of information systems and focus on improved data quality and end-use for policymaking:** This will be supported by full integration of program and financial data under the already well-functioning national health information management system to reduce the unnecessary burden of multiple reporting systems at the facility level.
- **Similarly, other duplications and overlaps in program execution should be identified and a single entity with responsibility for each program function designated within the overall health system**—such as procurement, supervision and supply chain management.
- **Specifically, for ensuring that essential services reach the poor and vulnerable, the delivery of integrated outreach services needs to be streamlined and strengthened.**
- **Strengthening the institutional capacity is necessary for managing the integrated scheme and steering purchasing functions for improved health system performance.**

Making the health system ready and able to take on the changing burden of disease is another critical policy focus area. Despite the significant progress in reducing the rate of DALYs lost, the country faces a double burden from NCDs while addressing an unfinished agenda to meet the health MDG targets and challenges of undernutrition and stunting. This double burden requires the health system to manage a diverse range of diseases and to respond to the growing demand for services. Necessary investments should include:

- Capacity building of health workers in managing NCDs;
- Use of standard treatment protocols at the primary care level;
- Improving coordination across levels of care; and
- Improved health information systems that allow electronic medical records.

Mainstreaming services, strengthening front line service delivery and ensuring coverage for the poor is a critical need during the transition period, and requires:

- **a uniform system to identify the poor and the vulnerable** and to track and ensure their access to the essential service package while vertical programs are being mainstreamed and multiple social protection schemes are being integrated under NHI;
- **ensuring adequate funding through both demand- and supply-side funding mechanisms** to cover the cost of delivering the essential service package for the poor and other target populations (pregnant women, mothers, and children under five) who are exempt from copayment under NHI; and
- **leveraging the information systems, monitoring and purchasing capacity in an integrated system to improve the quality of service delivery.**

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