PHC PLUS

INVESTMENT CASE

Primary Health Care for Universal Health Coverage

May 2022 | Male', Maldives

Ministry of Health
Republic of Maldives

unicef
for every child

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FOREWORD

It is widely agreed that Primary healthcare (PHC) is the backbone of an effective health system. Studies show that investing in primary health care improves clinical outcomes, reduces healthcare expenditure, and strengthens the ability of low to middle income countries to prepare for future pandemics while dramatically accelerating the speed by which they achieve their sustainable development goals. However, it is often misconstrued by financial entities that health is an expense, not an investment. A healthy society is the foundation on which national development is built on.

In the Maldives today, non-communicable diseases are the biggest cause for mortalities or risk factors leading to deaths. Studies show that the most likely reasons for the growing NCO crisis in the Maldives are sedentary lifestyles, unhealthy dietary habits, lack of awareness of personal health condition, smoking and substance misuse.

Therefore, the primary healthcare investment case proposes a new way of thinking about investing in PHC. This document answers the question whether it is feasible to identify a package of priority investments in PHC that can bring about revolutionary transformations in a reasonable timeframe. The investment case proposes gradually increasing the allocation of the health sector budget to PHC until 20% of the health budget is focused on achieving primary healthcare outcomes.

The Maldives primary healthcare investment case was developed with UNICEF's assistance, in collaboration with relevant stakeholders, and with the full commitment from the steering and technical committees of Ministry of Health.

I am confident that this document will provide technical and practical guidance to professionals in the Maldivian health sector on how best to plan investments in primary healthcare to achieve our desired health outcomes while simultaneously reducing the financial burdens on the individual and relevant institutions.

While this document clearly outlines the route to success, what is needed is the commitment from the whole of government and whole of society to achieve it. Ministry of health remains committed to pursuing all pathways that lead to achieving a healthy and happy society in the Maldives.

Ahmed Naseem
Minister of Health

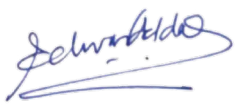
FOREWORD FROM UNICEF

UNICEF commends the Government of Maldives for the high-level commitment and investment in health systems and services and Primary Health Care (PHC). PHC remains the first point of contact with the health system and provides a platform for the delivery of essential health services to children, young people, and families. It is an essential and fundamental step to achieving Universal Health Coverage (UHC), and the health-related SDGs.

In 2018, countries around the world endorsed the Astana Declaration, committing to strengthen primary health care systems. Guided by this global framework and the 2030 Agenda, UNICEF is working with the Government of Maldives and partners to strengthen PHC and ensure that every child survives, thrives, and has adequate access to nutritious diets, quality health care and nurturing practices.

UNICEF is pleased to partner with the Government of Maldives to develop this PHC investment case and undertake the PHC costing exercise as a contribution to Government's on-going efforts to revitalize primary health care (PHC) in the Maldives.

UNICEF reaffirms its support for the national agenda to strengthen Primary Health Care and commits to accompany Government and partners in the national journey on primary health care revitalization and building resilient PHC systems. By committing to prioritize, and revitalise PHC, Maldives has the potential to transform health care service delivery and improve health security.



Dr Edward Addai
UNICEF Representative

ACKNOWLEDGEMENTS

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The team also extends appreciation to UNICEF country office and ROSA for their support and guidance at different stages of the exercise.

AUTHORS: Sheena Moosa, Athifa Ibrahim and Mariyam Shafeeq.

STEERING COMMITTEE
Dr. Shah Mahir, State Minister, MoH
Safiyya Mohamed Saeed, Deputy Minister, MoH
Maimoona Aboobakuru, Director General Public Health, HPA
Aminath Shaina Abdulla, Deputy Director General, MoH
Nayaz Ahmed, Deputy Director General, MoH
Moomina Abdullah, Director, MoH
Aishath Shahula Ahmed, UNICEF
Sudirriku Padmal Desilva, WHO

TECHNICAL COMMITTEE
Dr. Mariyam Jenyfa, HPA
Ramla Wajeeh, MoH
Aminath Shahuza, HPA
Sofoora Kawsar Usman, MoH
Mariyam Raufa, MoH
Aroofa Ahmed Naseer, MoH
Mariyam Mohamed, MoH

TEAM OF LOCAL EXPERTS, EPIC CONSULTING LLP, MALDIVES
Dr. Sheena Moosa, Public health specialist
Mariyam Shafeeg, Health economist
Athifa Ibrahim, Development specialist

UNICEF MALDIVES
Dr Edward Addai, Representative
Marjan Montazemi, Representative
Paulo Sassaro, Deputy Representative
Aishath Shahula Ahmed, Programme Specialist (H&N)
Khadheeja Ahmed, Consultant (H&N)

UNICEF REGIONAL OFFICE FOR SOUTH ASIA
Rene Ekpini, Regional Adviser (Health)
Adriana Rietsema, Health Specialist (MCH)
Manpreet Khurmi, Consultant (PHC)

EXECUTIVE SUMMARY

The following pictograms provide a summary of the investment case.

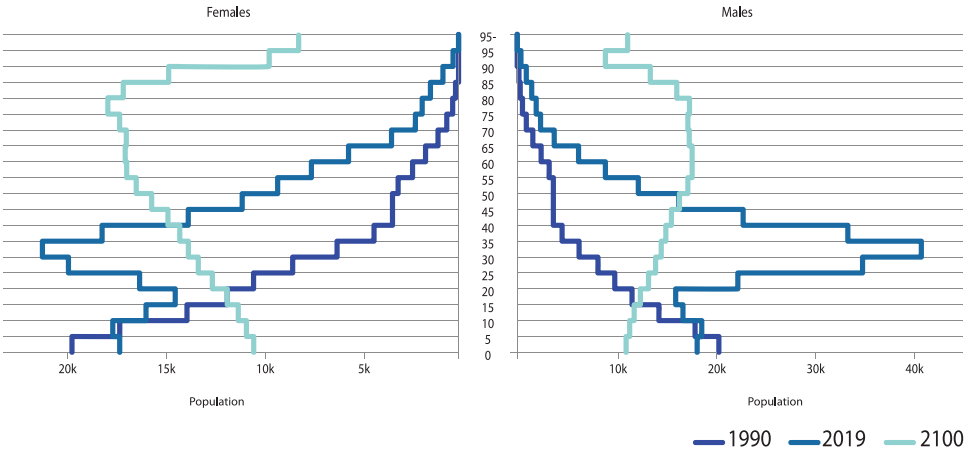
Rationale

PHC FOR UHC

PHC is the most efficient route to achieve UHC and health related SDGs

Demographics [1]

Current population structure demands continued investments in the bulge of adolescents and reproductive age population, while investing in NCDs and disability prevention in the middle-age and elderly population

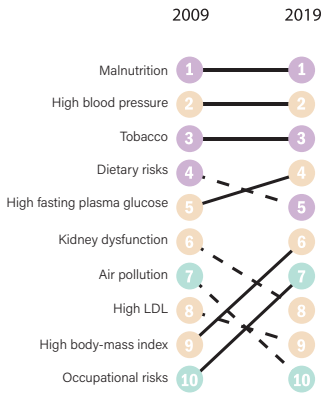


Disease Burden [2]

Investments in PHC interventions in the past decades have controlled communicable diseases and improved maternal and child health. NCDs, mental health and nutrition situation lead the burden of disease in the county.

Metabolic Risks | Environmental/ Occupational Risks | Behavioural Risks

	% change, 2009-2019
Malnutrition	-15.7%
High blood pressure	44.6%
Tobacco	44.5%
High fasting plasma glucose	70.6%
Dietary risks	44.2%
High body-mass index	110.6%
Occupational risks	82.2%
Kidney dysfunction	50.6%
High LDL	52.2%
Air pollution	-5.9%



Health Financing [3]

Maldives spends 11% of its GDP on health.

Government spends 22% of its budget on health (11% in service delivery and 11% in social health insurance, Aasandha).

Government spends MVR9374 (USD608) per capita, yet only 0.6% progress made towards UHC. Current effective coverage of the population is 67%.

National health spending on preventive health interventions continues to remain low at 1%

There is an urgent need to redirect allocation to preventive health to increase coverage of PHC interventions to achive UHC.

PHC Human Resources [4,5]

Nationally, doctors and nurses are beyond the SDG minimum threshold of 4.45 per 1,000 population recommended for UHC [6]

Yet, the density of CHWs for the population is in shortage

- 1.4 CHWs per 1,000 population, all local
- 4.4 doctors per 1,000 population with 64% expatriates
- 6.6 nurses per 1,000 population with 41% expatriates.

Costing Methodology

Approach

Driven by the Astana Declaration, UNICEF Regional Office For South Asia (ROSA) PHC costing roadmap 2021, WHO South-East Asia regional strategy for primary health care 2022-2030 [7-11]

Guided by the PHC investment steering committee, supported by technical committee

Validated at national workshops by multi-sectoral stakeholders and health professionals and managers

Steps

- Identify PHC Interventions with input from different service delivery levels & technical commitee
- Identify bottlenecks and health system interventions
- Determine baseline and target coverages for 2030
- Estimate costs and impacts

Data sources: published studies, national statistics, estimates, expert opinions, national plans, budgets, SDGs statistics

Tools

OHT

- Links PHC intervention targets to the required investments in Health system building blocks.
- Includes latest demographic and epidemiological information for the country.
- Allows to customize data, Interventions, and health system variables.

EXCEL **ONE HEALTH TOOL**

Cost Categories

PHC Intervention Costs

Intervention packages for NCDs, Mental health, Reproductive, maternal, newborn, child and adolescent health, immunization, Nutrition, TB/HIV and neglected tropical diseases.

Policy & Programme Costs

Interventions for control of tobacco, salt and fat consumption, financing programme monitoring, supervision, in- service training health education, communication and media campaigns.

Health System Costs

Human resource costs for PHC teams, urban PHC centers, logistics for medicines, equipment and supplies for PHC interventions, ICT networks and digital information system.

Returns

Health Impacts

Derived from impact modules of OHT

- Maternal, Newborn & Child Health - LiST (Lives Saved)
- NCDs and Mental Health - Healthy Years of Life Lived and deaths prevented

Economic Impacts

Derived from Excel Tool

- Productivity value gained
- Financial Returns

Data sources for economic impacts: World bank estimates, Maldives Bureau of statistics & academic literature

Limitations

- Health expenditure for PHC interventions by programme area not available for comparision
- Expert estimates used for baselines in a number of interventions.
- Emergency referral costs not included - assumed to be covered by Aasandha.
- Average costs used where there are variation in cost for the item. Eg. Salaries, medicines.

Costs & Returns 2023-2030

COSTS FOR THE PERIOD

PHC interventions cost only

MVR1,535,544,471 (USD99,581,354)

Per capita MVR305 (USD20)

PHC interventions & Programme costs

MVR2,936,762,139 (USD190,451,501)

Per capita MVR584 (USD38)

TOTAL INVESTMENT

PHC interventions, Programme & Health System costs

MVR7,576,388,977 (USD491,335,213)

Per capita 1506 (USD98)

Financing

For every **1 MVR** invested in scaling up PHC interventions **16 MVR** (1 USD) is gained

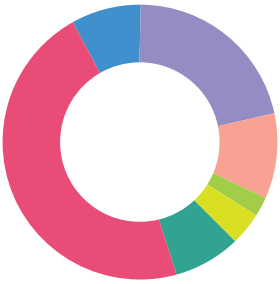
Resource Gap

Requires increase in allocation for PHC to 20% of government health spending

Annual incremental cost MVR276 Million (USD 17Million)

Cost Distributions

COST BY PHC PACKAGE

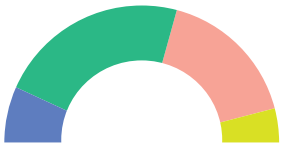


- RMNCAH
- NTDs
- Immunization
- NCDs
- Nutrition
- Mental Health
- HIV/TB

53% of cost is on NCD and mental health PHC interventions

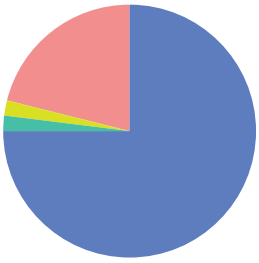
COST BY DELIVERY LEVEL

46% of cost is at Health centers (levels 3,4 and Urban centers)



- Health Center L1&2
- Health Center L3,4&Urban
- Hospital
- National Programme

COST BY SYSTEM BLOCKS



- Human Resources
- Infrastructure
- Information Systems
- Logistics and Supplies

75% of cost is on human resources for PHC

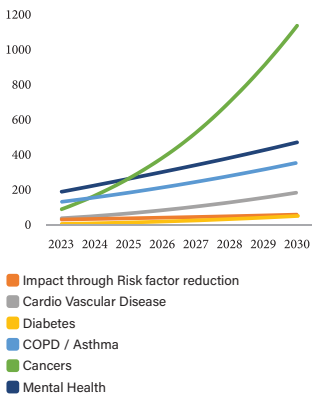
Health Impacts

Sustained PHC interventions scale up over 2023-2030 is estimated to

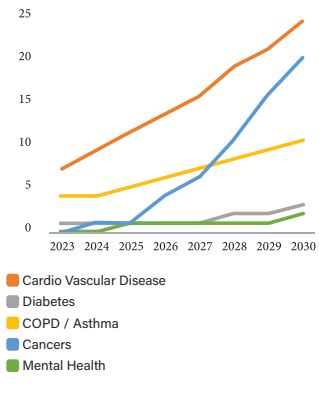
Gain 10,066 healthy years of life

Prevent 244 Deaths

Healthy years gained



Deaths Prevented



Stakeholders & Teams

Stakeholders Engaged

Education
Ministry of Education, Schools, Higher Education Institutes.

Gender & Social Services
Ministry of Gender, Family & Social Services

Youth
Ministry of Youth, Sports and community empowerment.

Finance
Ministry of Finance

Development Partners
UN Maldives

NGOs
Health focus NGOs: eg. NCD Alliance, SHE

Healthcare Institutions
Government Facilities, Aasandha

Local Governance
Local Government authority and local Councils

Community
Community social group (IBAMA), local Civil society organisations, Women's Development committees

PHC Investment Steering Committee

Dr. Shah Mahir
State Minister, MoH

Safiyya Mohamed Saeed
Deputy Minister, MoH

Maimoona Aboobakuru
Director General Public Health, HPA

Aminath Shaina Abdulla
Director, MoH

Nayaz Ahmed
Deputy Director General, MoH

Moomina Abdulla
Director, MoH

Aishath Shahula Ahmed
UNICEF

Sudirriku Padmal DeSilva
WHO

Technical Committee

Dr. Mariyam Jenyfa
HPA*

Ramla Wajeeh
MoH**

Aminath Shahuza
HPA

Sofoora Kawsar Usman
MoH

Mariyam Raufa
MoH

Aroofa Ahmed Naseer
MoH

Mariyam Mohamed
MoH

HPA* - Health Protection Agency
MoH - Ministry of Health**

Country Experts

EPIC Consulting LLP, Maldives

Dr. Sheena Moosa
Public Health Specialist

Mariyam Shafeeg
Health Economist

Athifa Ibrahim
Development Specialist

UNICEF

Maldives Country Office

Dr Edward Addai
Representative

Marjan Monazemi
Representative

Paulo Sassaro
Deputy Representative

Aishath Shahula Ahmed
Programme Specialist (H&N)

Khadheeja Ahmed
Consultant (H&N)

Regional Office for South Asia

Rene Ekpini
Regional Advisor (Health)

Adriana Rietsema
Health Specialist (MCH)

Manpreet Khurmi
Consultant (PHC)

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Maldives investing in PHC 2023-2030. Ministry of Health, Supported by UNICEF and EPIC Consulting LLP, April 2022

ABBREVIATIONS

ANC	Antenatal Care
BEmONC	Basic Emergency Obstetric and Newborn Care
CDR	Crude death rate
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHW	Community Health Worker
CSO	Civil Society Organisation
CWD	Children with disabilities
DALY	Disability-adjusted life years
DHIS	District Health Information Systems
DHS	Demographic and Health Survey
DV	Domestic Violence
ENAP	Every Newborn Action Plan
HIV	Human Immuno-deficiency Virus
HMIS	Health Management Information Systems
HMP	Health Master Plan 2016-2025
GBV	Gender Based Violence
GDP	Gross Domestic Product
GoM	Government of Maldives
GSWCAH	Global Strategy for Women, Children and Adolescent Health
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
IMR	Infant Mortality Rate
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
MCH	Maternal and Child Health
mCPR	Modern contraceptive prevalence rate
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MO	Medical Officer
MVR	Maldivian Rufiyaa
NCD	Non-Communicable Diseases
NHA	National Health Accounts
NHPF	National Health Performance Framework
NMR	Neonatal Mortality Rate
NSC	National Steering Committee
NTD	Neglected Tropical Diseases
PHC	Primary Health Care
PNC	Postnatal Care
PWD	Persons with Disabilities
RMNCAH	Reproductive, Maternal, Newborn, Child Health and Adolescent Health
ROSA	UNICEF Regional Office for South Asia
SAP	Strategic Action Plan of the Government of Maldives
SDG	Sustainable Development Goals
SDH	Social Determinants of Health
SEARO	WHO Regional Office for South East Asia
SN	Staff Nurse
STO	State Trading Organization
TB	Tuberculosis
TFR	Total fertility rate
TG	Technical Group
U5MR	Under-five Mortality Rate
UHC	Universal Health Coverage
UNCRPD	UN Convention on the Rights of the Persons with Disabilities
UNICEF	United Nations Children's Fund
USD	United States Dollar
WHO	World Health Organization

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INTRODUCTION

Strengthening Primary Health Care (PHC) was envisioned in the Alma Ata Declaration of 1978[1] and was further prioritized during the joint declaration by World Health Organisation (WHO) and United Nation's Children's Fund (UNICEF) in 2018 at the Astana conference. During this period, several conferences took place to provide much needed focus and attention for Primary Health Care (PHC) e.g., Ottawa Charter for Health Promotion in 1986[2], Social Determinants of Health in 2011 at Rio De Janerio[3,4]etc.

While Maldives performed well on many indicators of Millenium Development Goals (MDG) 4, the country lagged in goal 5 reflecting challenges of lack of human resources for health and high reliance on migrant workers resulting from lack of proper plans to develop human resources, inefficient or poor-quality data systems, funding and governance structures that can provide accountability systems[5]. In addition, the approaches used were neither people-centric nor based on results-based management, and the facility and community-based care was not integrated[6]. Furthermore, unlike many countries in the region, the main burden of disease for Maldives is contributed by Non-Communicable Diseases (NCDs) and that with the conditions associated with aging and elderly care and the main risk factors are from behavioral and metabolic risks. These challenges remain while the country is committed to the Sustainable Development Goals (SDG) goals. The poor design and implementation of health system building blocks undermined the attainment of health outcomes at the population level[7,8]. For example, not investing in primary health care directly influences the tertiary level care costs and causes congestion[9] which is a cause of concern for many countries, especially Maldives as several uncomplicated cases could be managed at the primary care level[10].

The Sustainable Development Goals (2015-2030)[11] emphasize ensuring healthy lives and promoting well-being for all at all ages (SDG Goal 3), and through the other goals related to health and non-health determinants of health e.g., ending hunger, food security, improved nutrition, agriculture, gender equality, women's empowerment, water and sanitation, economic growth, inequality within and among countries and safe, resilient and sustainable human settlements. The ongoing COVID-19 pandemic has shown the inherent weaknesses of the health care systems. Thus, at this moment, we must consider strengthening PHC approach in health service delivery to be ready for future disasters. In addition, PHC is a necessary precursor to attainment of Universal Health Coverage (UHC). This means that to achieve UHC in Maldives, all individuals and communities will need to be assured to receive preventive, curative and rehabilitative health services that they need without suffering from financial burden[12].

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BACKGROUND

COUNTRY CONTEXT

Maldives is an archipelago comprising of 1192 islands located in the Indian ocean, covering a geographical area of approximately 90,000 square kilometers of which land area comprise of only 298 square kilometers. On average, an island covers one to two square kilometers of land area, and rest between 1-2 meters above sea level. At present, a total of 187 islands are officially declared as inhabited islands. The islands form 26 natural clusters (atolls), which are administratively grouped into 20 atolls for organizational purpose. As of 2020, the resident population of the country is at 557,426, of which 379,270 are Maldivians and 178,156 are foreigners[13]. Malé, the capital city of the country has a population of 233,854, which is around one-half of the total population of the country. The life expectancy at birth of the Maldivian population in 2014 is 79 for males and 86 for females[14]. This can be attributed to several factors including improved access to better healthcare and diagnostic services, increase in awareness leading to shifts in health seeking behaviors and healthy lifestyles.

Maldives is an upper middle-income country with considerable socio-economic progress made over the past decades. Per capita income in 2019 was at MVR74,000 (USD 4,799) an increase form 2016 contributed largely by wage income[15]. However, with the COVID-19 pandemic the Gross Domestic Product (GDP) is contracted by over 30%[16] in 2020. Recovery is expected to be slow and the economy is not expected to reach pre-pandemic levels before 2023 and the poverty rate is estimated to increase from 2.1% of the population to 7.2%[17].

FIGURE 1: RESIDENT POPULATION OF MALDIVES (SOURCE: STATISTICAL POCKET BOOK, 2020)

[13] Population projections, National Bureau of Statistics.
[14] Maldives Health statistics 2017-2019. Ministry of Health.
[15] Household Income Expenditure Survey, 2019.National Bureau of Statistics, Maldives
[16] Maldives Monetary Authority (2021). Economic Update, April 2021
[17] Maldives Development Update April 2021.The world Bank

POPULATION CHARACTERISTICS

Maldivians represent the majority of the population, but the expatriate population is also significant, constituting about a third of the resident population[18]. Malé, the capital, has, 41.3% of the resident population and 58.7% are in the peripheral Atolls. At the periphery, population is highest in Seenu atoll and the lowest in Vaavu atoll. The youth population is predominantly higher in Maldives, with 42.5% of the population under 35 years of age and 3.4% of the population accounting for 65 and above years of age in 2014. Subsequently, the under-five population of children increased in number during the period of 2014 to 2021, owing to the shift in the age structure of the population.

The table 1 demonstrates population of the country, for both urban and rural population.

Table 1: Population distribution according to age by locality, 2021
(Source: Compiled from Population projections, National Bureau of statistics[19])

AGE GROUPS	MALE	PERIPHERY (ATOLLS)	TOTAL
BOTH SEXES	**234,454**	333,907	**568,362**
0-4	16,698	22,655	39,353
5-9	13,701	23,136	36,837
10-14	12,738	22,598	35,336
15-19	10,756	20,182	30,938
20-24	25,844	39,147	64,990
25-29	39,305	49,050	88,355
30-34	31,337	43,161	74,498
35-39	25,289	33,071	58,360
40-44	17,264	22,268	39,533
45-49	12,986	15,984	28,970
50-54	9,376	12,462	21,839
55-59	7,082	9,496	16,578
60-64	5,097	8,150	13,247
65-69	2,747	4,393	7,141
70-74	1,853	2,653	4,506
75-79	1,190	2,361	3,551
80+	1,190	3,140	4,331

[18] Population projections 2014-2054, National Bureau of Statistics.Maldives
[19] ibid

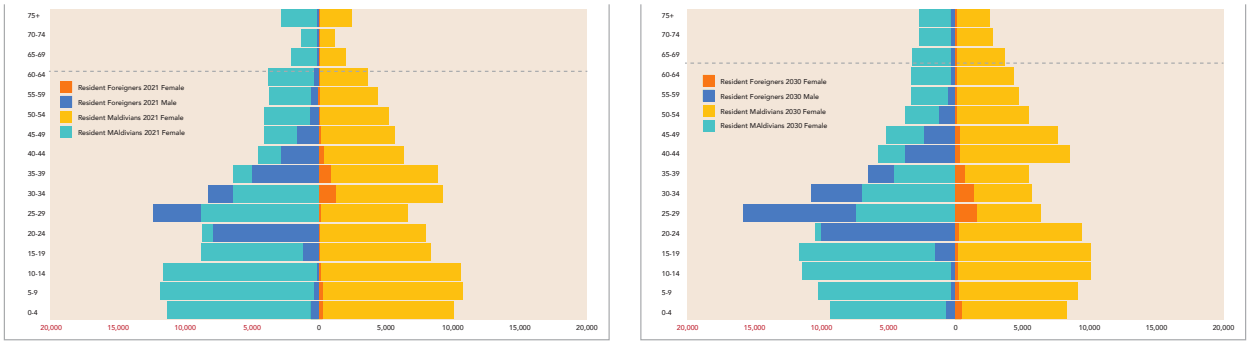


FIGURE 2 AND 3: AGE STRUCTURE OF RESIDENTS IN ADMINISTRATIVE ISLANDS, 2021 AND 2030
(Source: Maldives Bureau of Statistics[20], Maldives)

The general shape of the population pyramid indicates Maldives is experiencing the first population dividend, with a comparatively smaller proportion belonging to the older age groups and a larger proportion of the population in the reproductive age. The declining fertility rates are believed to be reason for the smaller proportions of the total population in the youngest age groups, which has remained relatively similar during this period. In 2010, the largest age groups were 15-19, 20-24 and 25-29. However, in 2020 the shift to 20-24, 25-29 and 30-34 age groups. A decline is seen for the age groups less than 15 years of age in 2020 and increase in the age groups above 25 years. The disparity in gender proportion is evident, with an increase in the proportion of males than females, especially in the age groups between 15-34 years and is driven by the predominantly male expatriate resident population.

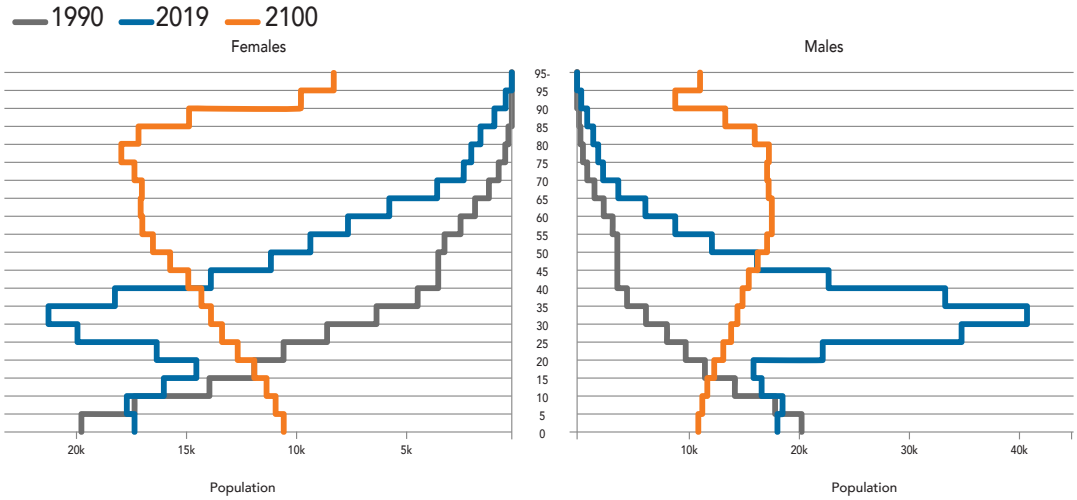


FIGURE 4: CHANGE IN POPULATION OF MALDIVES OVER THE DECADES[21]
(Source: Institute of Health Metrics)

The increase in proportion of the older age groups reflects decline in fertility levels and decline in mortality during the recent decades. The figure 2 and 3 reflects a steady increase in the dependent age groups, with an increase by 20.2% during the period of 2010 to 2020 for the 65 and above age population, resulting from increased life expectancy. With the current demographic trends, by 2030 more than 7% of the population will be in this older age group. This calls for investments now for healthy aging and reducing risk factors of NCDs.

DEVELOPMENT PLANNING

The country has national plans and strategies in place to achieve national and global targets. This includes the Strategic Action Plan (2019-2023) of the government (SAP), supplemented by sector specific medium to long-term plans. The SAP has about 90% alignment with SDGs[22] forms the basis of resource mobilization and allocation from government and development partners. In addition to the SAP, a long-term national development plan is being developed for a 10-year period.

[20] Statistical Year book of Maldives, 2021. Maldives Bureau of Statistics
[21] Institute for health metrics,
https://www.healthdata.org/maldives
[22] Mapping of the SAP 2019-2023 with the SDGs. SAP-SDG mapping matrix. unpublished
[23] Health Master Plan 2016-2025, Ministry of Health, Maldives

Towards ensuring the overall health and well-being of the population, the Health Master Plan 2016-2025[23] (HMP), is a long-term plan with the vision of ensuring "Enhance health and well-being of the population" with the envisaged outcomes to "Build trust in the national health system, reduce disease and disability among the population and reduce inequities in access to health care services and medicines.".

While, in the past, Reproductive, Maternal, Newborn, Child and Adolescent health (RMNCAH) issues were addressed through separate strategic action plans, in 2019 considering the common areas of interventions, efforts were made to develop one comprehensive RMNCAH strategy for the period 2020-2025[24]. Having a comprehensive strategy and action plan will promote a continuum of care in line with what is in the Global Strategy for Women's, Children's and Adolescents' Health and enable alignment of partners and resource mobilization across the RMNCAH spectrum. It is also expected to and minimize overlap and gaps between the various sub-sectoral areas per what occurred in the previous National Reproductive Health Strategy, National Nutrition Strategy, and the National Child Health Strategy and Every Newborn Action Plan (ENAP).

As the main burden of disease is NCDs, the country has developed a multi-sectoral Action Plan for Prevention and Control of NCDs in Maldives (2016-2020)[25] with actions to address key challenge for controlling NCD risk factors: tobacco use, importation of unhealthy food (diet rich in saturated fats or high salt consumption) and inadequate consumption of vegetables and fruits and urban sedentary lifestyles. The NCD Action Plan is also motivated by nation's commitments made at the international and regional forums such as the Political Declaration of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of NCDs (September 2011), Global Action Plan for the Prevention and Control of NCDs (2013-2020) endorsed through resolution WHA66.10 (May 2013) and the Resolutions of the Twenty-ninth Meeting of the Health Ministers in WHO Regional Office for South East Asia (SEARO), 2011.

HEALTHCARE DELIVERY SYSTEM

The health care delivery system of Maldives is organized into a four-tier system with island level primary health centers, six regional hospitals (groups of 2-4 atolls) and thirteen atoll hospitals with a range of specialties and diagnostic facilities and tertiary care at central level. Private sector health care delivery is largely at the central level providing tertiary care and specialty outpatient services. A number of civil society organizations (CSOs) are involved in providing preventive and rehabilitation services, mostly based at central level.

Administratively, the regional or atoll hospital in each atoll, (with exception of Kaafu atoll) acts as the main coordinating body in providing primary and curative health care for the respective atoll. Primary care in Maldives is provided through health centers and in Male' city through a separate Urban Health Center (Dhamanaveshi). In addition to the curative services, public health services are also provided by the health centers, Dhamanaveshi and inbuilt public health units of Atoll and Regional hospitals. Irrespective of the population size, each of the inhabited islands in the country has a health facility with basic medical care and referral mechanism for emergency services. The healthcare system of the country, thus, follows a referral pathway, from island level health facilities through Atoll or Regional level or directly to the central level for seeking specialized care and services. However, patients can access the healthcare system to seek services at any preferred entry point.

Health care services including medical examinations, investigations, immunization, Antenatal Care (ANC), and rehabilitation therapy services by the government are provided free of cost to all Maldivian citizens. While medicines are covered by the health financing scheme, Aasandha, private health care is not fully covered. Further to the routine healthcare services provided by the health facilities across the country, health services also have systems inbuilt for public health emergencies and disaster preparedness and response. This includes national protocols and drills for emergency response and preparedness.

The 189 government health facilities in the country are graded based on their capacity and complexity level of services available through the facility. The island level health centers have four levels classified into grade 1, 2, 3 and 4. These primary care centers offer basic medical services, public health promotion and prevention services. Additionally, atoll hospitals are graded as higher-level health facilities, classified into grade 1, 2 and 3, with the provision of maternal and newborn care, with grade 3 hospitals designated as regional hospitals (cluster of 2-4 atolls) providing specialized care and services Further, these hospitals (at the secondary level) located in the periphery supports the provision of curative services with major specialties in surgical, including radiological and laboratory investigation services. Tertiary level care hospitals are based at the central level. At the periphery, the Addu Equatorial Hospital in Seenu atoll and Kulhudhufusi Regional Hospital in Haa Dhaalu atoll also provides some tertiary level care. A unique feature of the Maldives health system is that all the secondary care hospitals as well as the upgraded hospitals Seenu atoll and Haa Dhaalu also provide preventive health services and primary care, in addition to higher level curative care according to the level of the facility. A public health unit is established at these hospitals that provide public health and preventive health care services.

[24] Maldives RMNCAH strategy and action plan 2020-2025.
[25] Multi Sectoral Action Plan for Prevention and Control of NCDs in Maldives (2016-2020), Ministry of health, Maldives

Table 2: Healthcare facilities in Maldives[26]

CENTRAL LEVEL	
TERTIARY HOSPITALS	3
OTHER HOSPITALS (PUBLIC AND PRIVATE)	4
URBAN HEALTH CENTER	1
PRIVATE MEDICAL CLINICS (INCL ALTERNATIVE MEDICINE CLINICS)	98
PHARMACIES	100
ATOLL LEVEL	
HOSPITALS (GRADE 3) /REGIONAL HOSPITAL	5
HOSPITAL (GRADE 2)	9
HOSPITAL (GRADE 1)	5
OTHER HOSPITALS (PUBLIC AND PRIVATE)	1
PRIVATE MEDICAL CLINICS (INCLUDES CLINICS IN RESORTS)	96
PHARMACIES	59
ISLAND LEVEL	
HEALTH CENTRE (GRADE 4)	7
HEALTH CENTRE (GRADE 3)	49
HEALTH CENTRE (GRADE 2)	45
HEALTH CENTRE (GRADE 1)	54
PHARMACIES (INCLUDING RESORTS)	199
GRAND TOTAL	

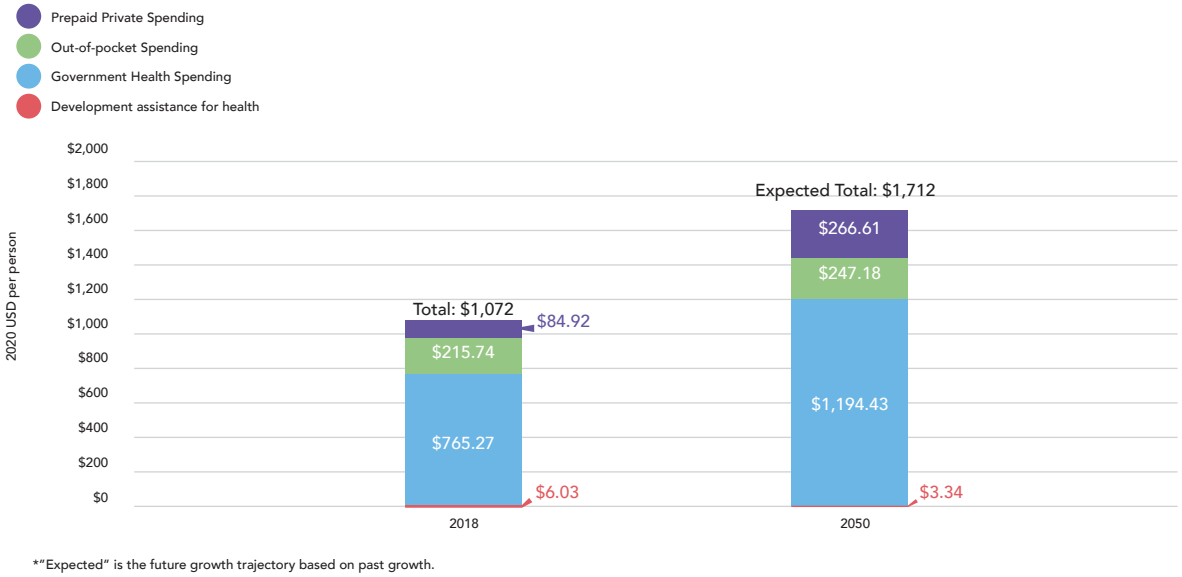
UNIVERSAL HEALTH COVERAGE

Provision of universal access to quality healthcare without financial hardship has been a prioritized commitment of the Government of Maldives (GoM), as part of the country's effort towards achieving Universal Health Coverage. The constitution, Acts, government policies, and plans including the health master plan mandates the access to quality equitable health services to all citizens of the country.

The social health insurance Act (15/2011) provides the legal framework in providing financial protection for health care. To deliver this, Aasandha scheme was introduce in 2012[27], which is a tax funded health insurance system with extensive coverage of healthcare. Aasandha, has a financing mechanism that is connected to both state and private healthcare providers to ensure coverage of health expenditures (inpatient and outpatient treatment including drugs and diagnostics) free to all Maldivians. Aasandha covers cost of majority of medical care, and under this system, the Maldivian people have access to free medical care with referrals covering transport costs during emergencies as well as treatment coverage for patients requiring certain medical services abroad for services that are not available in the country. This reduced the out-of-pocket expenditure from 40% to 19% from 2010 to 2019, however, the effective UHC coverage index did not change much with

[26] Data on private facilities and pharmacies from published list of private healthcare facilities available at MoH website. Public facilities by grade – unpublished data from MoH. All pharmacies are private or by State owned enterprise STO
[27] Aasandha Company Ltd. Maldives.
https://aasandha.mv/
[28] Institute for Health Metrics, Maldives.
https://www.healthdata.org/maldives

is estimated at 66.9% for 2019 and with an average change per year of 0.6% from 2010[28]. With the current trend, government health spending per capita is estimated to grow from USD765 to USD1194 from 108 to 2050.



*"Expected" is the future growth trajectory based on past growth.

FIGURE 5: CHANGE IN POPULATION OF MALDIVES OVER THE DECADES
(Source: Institute of Health Metrics)

The implementation of Aasandha brought significant changes to the health financing landscape of the country, increasing health expenditure to about 9% of the GDP. The advent of fully funded health financing scheme by the government has enabled improved accessibility to healthcare services for the population in the outer Atolls, despite the geographical dispersion of the country.

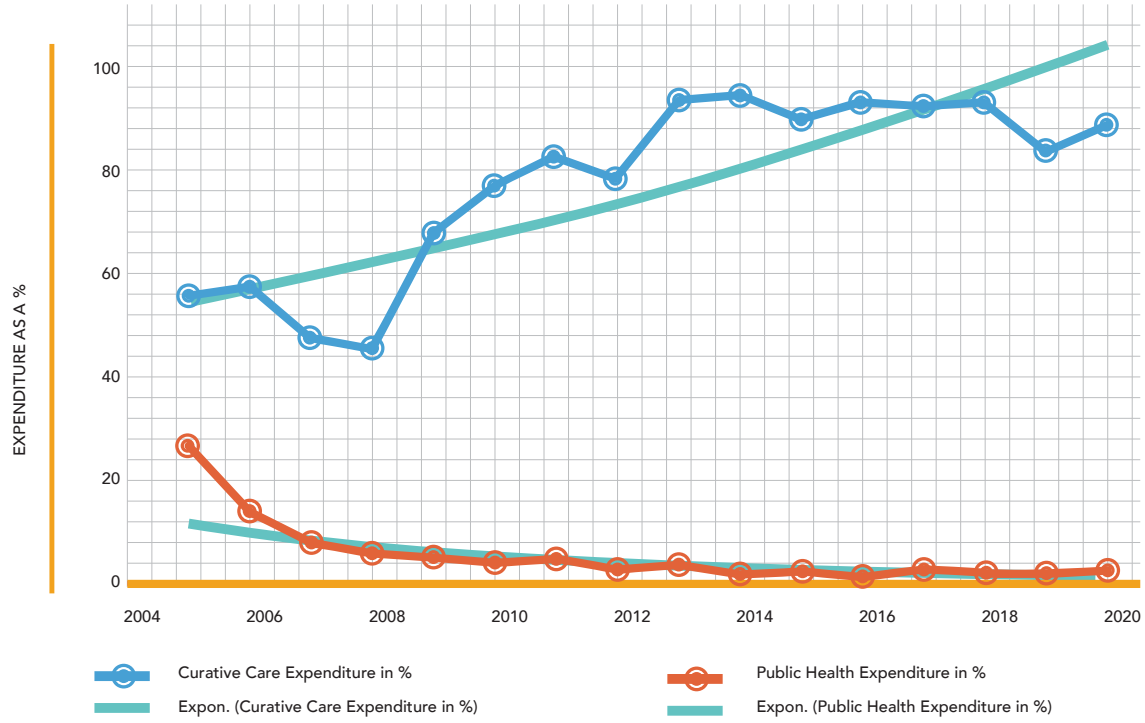


FIGURE 6: EXPENDITURE ON PUBLIC HEALTH VERSUS CURATIVE CARE
(Source: reproduced form Maldives Health Service Manual, Edition 1)

However, service gaps remain that limit progress towards universal health coverage. This is reflected in the National Health Accounts (NHA) 2015-17 with health expenditure on preventive health less than 2% while expenditure on pharmaceuticals increased to a nearly a third, at 32%[29]. This points to the misallocation of resources with high expenditure on curative services for NCDs that is ineffective in reducing healthcare costs as well as improving health outcomes. Furthermore, there is mismatch in financial allocation with the low expenditure on reproductive, maternal, child and adolescent health (RMNCAH) despite the population

[29] National Health Accounts 2015-2017, Ministry of Health, Maldives

structure suggest the population dividend with a large adolescent and young people indicate the need for further investments for bridging gaps in the services in this area[30]. At the same time there are no allocations made for promotion of health ageing as the population moves towards an ageing society.

Additionally, to ensure availability of medicines and prevent shortages in remote island communities, the government with State Trading Organization (STO) arrived at a partnership agreement in 2014. Hence, pharmacies were established in islands and outsourcing of medical supplies and consumables were enabled through STO, in coordination with the Ministry of Health. While this mechanism and coverage of medicines by Aasandha has increased population access to medicines, NHA raises concern about the high proportion of health expenditure on medicines. Assandha expenditures show that pharmacy reimbursements on drugs increased annually by 27 percent on average from the period 2015 to 2018[31]. This translates to MVR 505 million on average every year just on this component of Aasandha expenditure, which amounts to an annual per capita expenditure of MVR 1417. This situation indirectly reflects inadequate financing of preventive and health promotion interventions and the weaknesses in the health system with regard to implementing PHC approaches in health service organization and delivery.

HEALTH INFORMATION SYSTEM

Health information systems at present are not interconnected and many information systems for national public health programs, such as childhood vaccination and growth monitoring continue to be paper based and updated in Excel spreadsheets. District Health Information Software Version 2 (DHIS2) was introduced in Maldives as a national health information management system in 2017. The introduction of DHIS2 to Maldives was carried out in a phased approach. As part of phase 4 activities, since July 2019, DHIS2 has been rolled out at a national level in all public health facilities and private hospitals. Currently only limited routine information is collected which does not include public health data in 2020. However, work is currently ongoing for integration with other existing systems and also the introduction of specific modules related to immunization and reproductive health to capture relevant routinely collected data from health facilities. It is envisaged that DHIS2 would assist in better data management, analysis, monitoring & evaluation of key health indicators for informed and/or evidence-based decision making. In addition, DHIS2 once integrated to systems like integrated disease surveillance system of communicable diseases, Gemen and Vinavi will aid in proactive surveillance of communities, aiding community medical officers in maintaining the health and wellbeing of the community they are at. A current challenge within the health sector on data collection and analysis is that health centres and facilities have to enter the data into different portals and systems because they are not integrated or interconnected, leading to double entries and double the work for staff, which discourages them from entering and sharing data with MoH. Further, there is no National Health Performance Framework (NHPF) for Maldives that considers mapping of all indicators to the NHPF with alignment of health information system to capture these. While this is so, there are plans in the pipeline to work on the Digital Health Enterprise Architecture and development of interoperable solutions and updating of Digital Health Masterplan supported by WHO and other development partners.

HEALTH SITUATION

Better access to healthcare in the country is reflected in the significant decrease Crude Death Rate (3 per 1000 population) of the country, from 2010 to 2014, However recent data of 2019 indicates a slight increase in crude death rate (4.9 for females and 5.5 for males)[32]. Maldives has also made significant progress in reducing the rates of maternal, infant and child mortality. This accounts to the effective immunization programs and enhanced accessibility and expansion of healthcare services at the periphery. The under-five mortality of the country has significantly declined and stood at 8 per 1000 live births (9 for male and 7 for female) and Infant Mortality Rate at 6.5 per 1000 live births in 2019 (7 for male and 6 for female). However, a greater challenge for further reduction of infant mortality now lies with reducing neonatal death rate.

With the decline of maternal and child health indicators, Maldives is facing the double burden of disease and malnutrition. NCDs (Cardiovascular diseases, Diabetes, Chronic obstructive pulmonary diseases, Cancer and Mental health conditions) are the main contributor of morbidity and mortality, while a number of communicable diseases continue to be endemic. Sedentary lifestyles, poor nutrition and feeding practices, tobacco and drug use continues to be among the major factors leading to early onset functional disabilities at middle age. The nutritional status based on the recent 2016-17 DHS indicates that 15% of children under-5 years of age are stunted, 9% wasted and 15% underweight[33]. The rate of obesity is also higher among adult populations, especially among women (49%), compared to men (35%), which is a contributing risk factor for non-communicable diseases. Furthermore, undernutrition in young adolescent girls and women is directly related to adverse birth outcomes in newborns.

[30] Moosa S & Usman SK. Are we on track to achieving universal coverage? Maldives Economic Review, September 2020. p10-16
[31] Budget in Statistics 2020. Ministry of Finance, Maldives
[32] Maldives Health Statistics 2017-2019. Ministry of Health
[33] Maldives Demographic Health Survey 2016-17. Ministry of Health and ICF

The high prevalence of anaemia (58.5%) also contributes to be a significant burden in the country and is a major public health concern. According to DHS 2016-17 findings, about half of the children in the age range of 6-59 months are anaemic, and the rate is higher among boys (53%), compared to girls (46%). Similarly, within this age group, 1% of children are severely anaemic, 20% moderately anemic and 29% of children are mildly anaemic. The prevalence of anaemia is generally the highest among the ages of 6-8 months (65%) and this progressively declines to 42% in the ages of 48 to 59 months. In Maldives, the central region of the country demonstrates the highest rates of anaemia (66%) and likewise it is lowest in the north central region (38%). Additionally, anaemia is a prevailing concern among women of reproductive ages, with one in three women (63%) in the country being anaemic. It is also predominantly higher among women who smoke (73%). The rates of anaemia are found to marginally rise with age among women of childbearing years. Further, in the urban capital city of Malé, anaemia prevalence (73%) is higher among females than in the periphery (56%).

The country's significant decline in the crude death rate (CDR) over the years was primarily linked with the fall in infant and child mortality rates over the last two decades, with better access to healthcare services by medical professionals and effective immunization programmes. Health care services during pregnancy and after delivery are imperative for the survival and wellbeing of both the mother and the infant. Nearly 99% of women in the country receive antenatal care from a skilled provider, indicating almost universal coverage. Further, all deliveries (100%), are assisted by skilled providers with 95% of births delivered in a health facility (Maldives Demographic Health Survey, 2016-2017. Similarly, the age at which women begins childbirth is also a critical factor, as this determines the wellbeing of both the mother and the baby. The median age of women whereby they give birth to the first child is 23.2 years in Maldives, indicating that 50% of women in the age category of 25-49 years give birth before they reach the age of 23 years.

In the Maldives the use of contraceptives is decreasing. The DHS 2016-17 showed that the overall, the modern contraceptive prevalence rate (mCPR) amongst married women decreased from 27% in 2009 to 14.9% in 2016/17, and, as of 2016/17 the mCPR was lowest in the Southern Region. However, there was no real correlation between mCPR and education or wealth groups. Demand for contraception also decreased during this period, but unmet need went from 28.1% in 2009 to 31.4% in 2016/17. Unmet need is lower among all women than among currently married women (23% versus 31%, respectively); however, it is extremely high among the small number of sexually active unmarried women reported in DHS 2016-17 (89%)[34]. Particularly striking about the current situation in the Maldives is that the decrease in contraceptive usage and demand satisfied by modern contraceptive methods, and the corresponding increase in unmet need, happened at the same time that the total fertility rate (TFR) was declining. Although abortion is permitted in specific grounds, cultural and religious beliefs result in low reporting of abortions and there no clear evidence in the rate of abortion among reproductive aged women.

The child immunization rates reached very high coverage in recent decades because of the expansion of public health services at the island and community levels, and delivery of primary health care services by local health workers. In Maldives, routine childhood vaccines protect against tuberculosis (BCG vaccine), hepatitis B (HepB vaccine), diphtheria, pertussis, tetanus (formerly combined as DPT), Haemophilus influenzae type b (Hib vaccine), polio, mumps, neonatal tetanus, measles, rubella and congenital rubella syndrome. However, the most recent DHS (2016- 2017) indicated a decline from 93% in 2009 to 77% coverage for full immunization with all basic childhood vaccines in 2016-17. Hence, based on the available evidence, and growth in the number of unvaccinated children (8%), the need for more strategic actions on vaccine hesitancy is imperative to prevent future outbreaks from vaccine preventable diseases.

The healthcare services and overall health situation of the country has improved significantly over the decades as demonstrated by the improvements in life expectancy, reductions in fertility and mortality rates. These achievements in health outcomes are linked to high coverage of evidence-based interventions and improved access to health care at all levels in the country coupled with high literacy rates and improvements in the socio-economic status. However, owning to the geographical dispersion of the islands, improving access to quality healthcare services and filling service gaps remains a challenge in the country. Further, the high reliance on expatriate health professionals linked with the high staff turnover also continues to be a challenge in ensuring the continuity of services and sustaining health workforce.

There has been a steady decline in all the indicators as demonstrated in table 3 and figure 6. The highest decline in percentage is observed for Maternal Mortality ratio (MMR) from 1990 to 2015, and the lowest decline is seen for Total Fertility Rate (TFR). Maldives has achieved the goal of MDG of reducing maternal mortality. The decline in maternal mortality rate over the last decades with fewer maternal deaths is a reflection of the progress made in the area of maternal health in the country. The maternal mortality rate has had a 3.6% average annual reduction from 1990 to 2015 with 90% reduction during this period. In 2015, fewer maternal deaths occurred than in 1990. During 1997, a formal maternal death review system was initiated as to identify and focus on interventions to reduce the associated deaths. Further, the atoll level health centers within the

[34] Maldives Demographic Health Survey 2016-17. Ministry of Health and ICF

country were also upgraded to hospitals to provide Comprehensive Emergency Obstetric Care (CEmOC) with promotion of institutional deliveries and ANC, owing to the decline in maternal mortality rates. Further, the recent DHS 2016-17 findings indicate high ANC coverage, with 99% of women receiving care from a skilled provider and 100% of deliveries assisted by skilled providers. Additionally, almost all deliveries (95%) take place in a healthcare facility and remains consistent since 2009.

In Maldives, the major causes of maternal deaths in the country were associated with "Obstetric Haemorrhage (28%), complications of hypertension in pregnancy (17%), embolus (17%) and sepsis (11%)" during the period of 2009-2011. It should be noted that MMR indicates noticeable fluctuations due to the small population size of the country, whereby the increase reflects significantly even with an increment of one death.

The under-five morality and infant mortality rate has declined significantly during the period of 1990-2015. Neonatal Mortality Rate (NMR) also indicates gradual decline within the key maternal and child health indicators, with a reduction of 85% during the period of 1990 to 2015. Despite the improvements, further reduction of child mortality remains a considerable challenge as it now lies with reducing neonatal death rate. The major causes of newborn deaths are associated with premature births and congenital anomalies such as neural tube defects and congenital heart defects. Hence, further strengthening of institutional capacity and prevention of birth defects through targeted interventions and integration of a life cycle approach for early detection and management will support to enhance reductions in neonatal and maternal mortality rates.

Table 3: Mortality profile of maternal and child health, decline and proposed global targets for Maldives
(Source: UN Inter-agency Estimates: Trends in maternal mortality: 1990 to 2015 UN MMEIG 2015, UN Inter-agency Group for Child Mortality Estimation, MDHS reports)

INDICATORS	1990	1995	2000	2005	2010	2015	POINT DECLINE 1990-2015	% DECLINE 1990-2015	SDG TARGET
Maternal mortality ratio (per 100,000)	677	340	163	101	87	68	609	90	70
Under 5 mortality rate (per 1000)	85.85	62.3	38.87	21.34	13.87	10.15	75.7	88	25
Neonatal mortality rate (per 1000)	39.36	32.25	21.79	12.03	7.62	5.87	33.49	85	12
Infant mortality rate (per 1000)	63	47.9	31.6	18.2	11.9	8.7	54.3	86	-
Total fertility rate	6	4.24	2.77	2.28	2.21	1.99	4.01	67	2

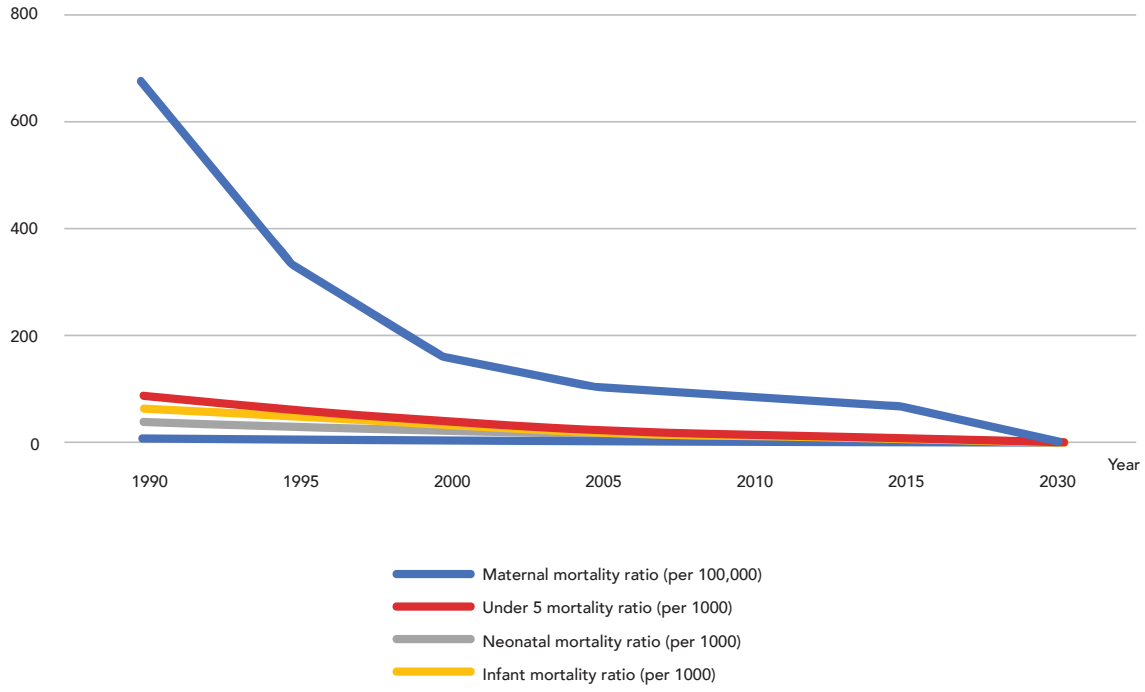


Figure 7: Decline in Key Mortality indicators in Maldives, 1990 to 2015
(Source: UN Inter-agency Estimates: Trends in maternal mortality: 1990 to 2015 UN MMEIG 2015, UN Inter-agency Group for Child Mortality Estimation, MDHS reports)

Maldives has achieve the traditional SDG indicators and requires localization of the SDG indicators to match the country specific needs, particularly those related to NCDs and their risk factors, neonatal morality and health ageing.

CURRENT BURDEN OF DISEASES

Epidemiologically, Maldives is transitioning from high burden of communicable diseases towards a shift in increasing burden of non-communicable diseases (NCDs). Maldives has achieved remarkable milestones in improving the communicable disease landscape of the country. The country has received the elimination status from World Health Organization (WHO) for communicable diseases such as malaria, filariasis, polio, measles, mumps, neonatal tetanus, rubella, congenital rubella syndrome and mother to child transmission of HIV. The country is embarking on further communicable disease control with a vision to end TB, eliminate Viral Hepatitis and achieve zero leprosy. However, dengue, diarrhea and acute respiratory infections continue to be endemic despite the improvements in water and sanitation situation of the country, largely due to unsafe hygiene practices.

The emerging trend in the prevalence of non-communicable diseases is connected to globalization and exposure to risk factors, including the consumption of unhealthy food and drinks, sedentary lifestyles, tobacco use and import of unhealthy foods. In Maldives, NCDs contributes to high proportion (78%) of the total disease burden in the country and is a major cause of morbidity and mortality. Similarly this trend continues to be an emerging concern with the changes in lifestyle and development in the country. The government of Maldives recognizes the high burden of non-communicable diseases and its impact on individuals, societies and on the productivity of the country as a whole and hence, has placed a high priority with specific national plans and targets for prevention and control of NCDs. This includes a national multi-sectorial action plan with the goal of "reducing preventable morbidity, avoidable disability and premature mortality due to NCDs" in Maldives. The plan focuses on the four keys modifiable NCD risk factors whilst ensuring a full-rounded approach in implementing policies and other fundamental elements to address underlying social and risk factors of NCDs. Similarly, the Health Master Plan, of the government also identifies the burden of NCDs and focuses on improving the health of the population through a preventive and promotive approach for NCD control and prevention in the country.

Metabolic Risks | Environmental/ Occupational Risks | Behavioural Risks

	% change, 2009-2019
Malnutrition	-15.7%
High blood pressure	44.6%
Tobacco	44.5%
High fasting plasma glucose	70.6%
Dietary risks	44.2%
High body-mass index	110.6%
Occupational risks	82.2%
Kidney dysfunction	50.6%
High LDL	52.2%
Air pollution	-5.9%

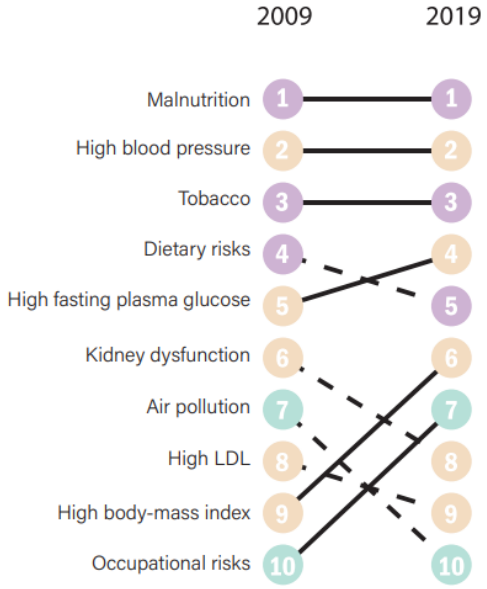


FIGURE 8: CHANGE IN THE BURDEN OF DISEASE IN THE MALDIVES 2009-2019
(Source: Institute of Health Metrics)

In Maldives, the predominant risk factors for causing the most disease burden include high prevalence of tobacco use, high body mass index, dietary risk factors and high blood pressure. Further, for children (under five years) and women, the leading risk factors include anemia and malnutrition. Although there is anecdotal evidence of other micronutrient deficiencies such as vitamin D and folic acid, the evidence is outdated and research need to be conducted to obtain a clear picture of micronutrient deficiencies among the population. Cardiovascular diseases, followed by chronic respiratory diseases, accidents and injuries, diabetes, and cancer, are the major cause of mortality in the country.

Age groups	Female		Male		All Persons	
Under 5	Low birth weight	10%	Low birth weight	12%	Low birth weight	24%
5-9	Other neuropsychiatric disorders	20%	Other infectious diseases	7%	Other neuropsychiatric disorders	27%
10-14	Other respiratory diseases	80%	Road traffic accidents	8%	Other respiratory diseases	8%
15-24	Other cardiovascular diseases	7%	Other cardiovascular diseases	9%	Other cardiovascular diseases	16%
24-34	Other neuropsychiatric disorders	3%	Other cardiovascular diseases	10%	Other cardiovascular diseases	13%
25-49	Other cardiovascular diseases	2%	Ischemic heart disease	12%	Ischemic heart disease	14%
50-64	Other cardiovascular diseases	4%	Ischemic heart disease	10%	Ischemic heart disease	14%
65-79	Other cardiovascular diseases	5%	Other cardiovascular diseases	7%	Other cardiovascular diseases	13%
80 and above	Other cardiovascular diseases	6%	Ischemic heart disease	8%	Other cardiovascular diseases	13%

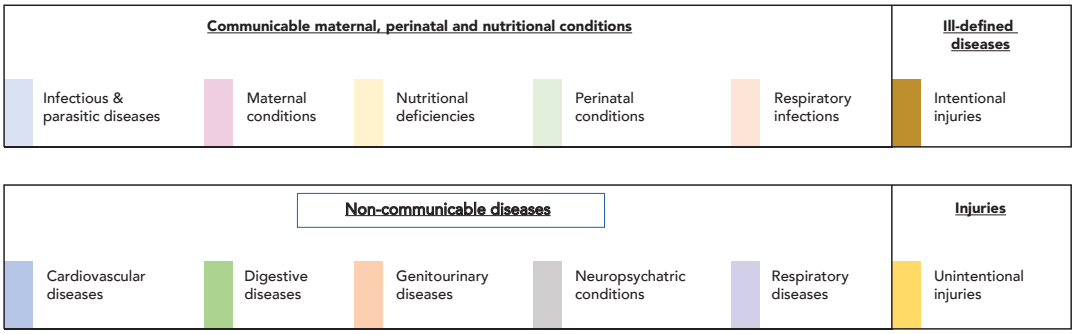


FIGURE 9. BURDEN OF DISEASES IN THE COUNTRY DISAGGREGATED BY AGE AND SEX FOR 2017-19
(Reproduced from Maldives health profile, 2019)

ABUSE AND VIOLENCE

Gender based violence (GBV) has been acknowledged as an increasing public health challenge, besides a human rights violation. In Maldives, about 17% of women in the age category of 15-49 years have experienced physical violence and 11% of sexual violence according to the latest findings of DHS 2016-17.

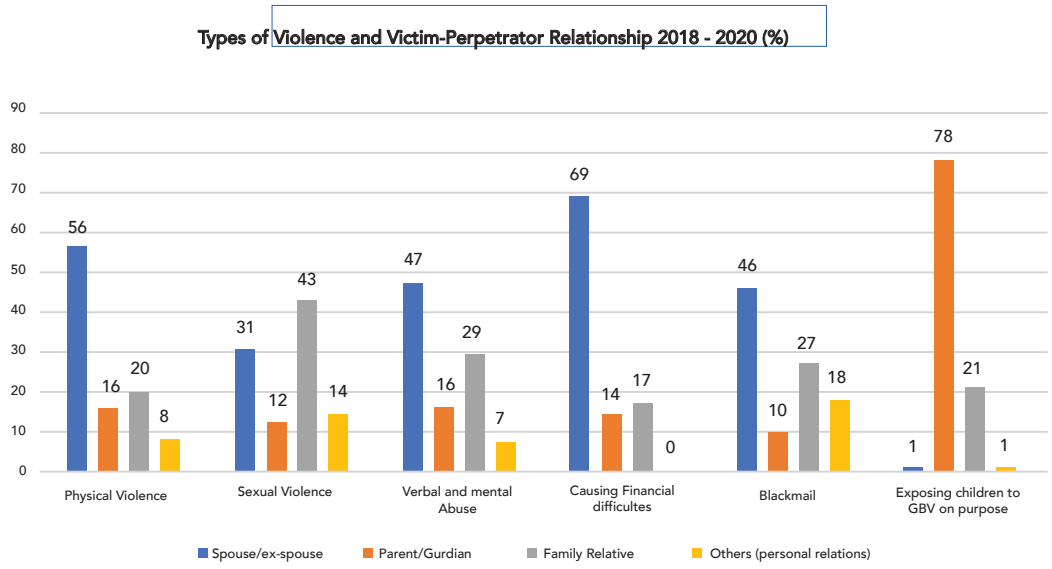


FIGURE 10: TYPES OF VIOLENCE BY VICTIM-PREDATOR RELATIONSHIP
(Family Protection Authority-Statistics: 2018-2020)

The constitution of the Maldives safeguards equal treatment for both genders in the country and further reiterated in the Gender Equality Act (18/2016). As part of the efforts towards combating violence against women, laws, acts, policies, and guidelines have been fixed in place. This includes, the domestic violence prevention Act (3/2012), which establishes "a duty of care on health professionals and social workers to report suspected cases of domestic violence". Similarly, sexual Offences Act (17/2014) provides for the protection of children and adults from all forms of sexual violence and includes an aspect to prevent rape within marriage and the Family Act (4/2000), also further "recognizes the cruelty to the wife as an unacceptable and grounds for divorce". Similarly, the country has also recently enacted a Child Rights Protection Act (19/2019), which provides legislative framework for the protection of children's rights and the right for protection from abuse, violence, neglect and discrimination inclusive of children with disabilities.

Gender based violence have detrimental impacts, including considerable mortality and morbidity due to the underlying effects. The role of health sector in responding to GBV is hence critical in order to identify and successfully treat and provide the required support to effected individuals. The Health Master plan 2016-2025 also has integrated strategic actions on GBV care for women. In this context, a national guideline on providing care and prevention for healthcare providers is in place in Maldives as part of the health systems response to GBV, which is designed to "assist the health care providers to deliver holistic, effective, and comprehensive medical care, including emotional support to survivors of GBV, respecting their rights, needs and sensitivities"[35]. The pandemic situation further highlighted the issue of GBV risk of violence have been magnified during the lockdown period, when survivors had to live in close proximity to their perpetrators or when families experienced financial strain[36].

DISABILITIES

The 2019 data[37] shows the prevalence of disability among children 5-17 years is 4.4% (4.0% among girls and 4.7% among boys) however the increased proportion among boys are driven by the difference observed only in the ages 5-9 years). Among adults, women represent a higher proportion across all age groups. As the age advances the prevalence of disability increases; from 4.2% in the 18-35 years age group (4.7% among women 3.6% among men) to 11.7% in 35-64 years (14.6% among women and 8.2% among men) to 45.4% in 65 and older age groups (50.3% among women and 40.5% among men). Disability prevalence is higher in the Atolls (10.8%) compared to Male' area (7.5%). The prevalent form of disabilities among the population were those on of the mobility domain, vision and cognition. About 35% reported to experience multiple disability, most experiencing difficulty in two domains. About a third (30%) reported mild-moderate levels of disability and 2% reported severe disability. It is estimated that about 10% of the PWDs had been subjected to various forms of abuse and 40 to 60% of girls or women with disabilities, were subject to sexual abuse[38]. It is noted the families of these victims often do not report these cases to authorities, because the police investigation and judicial process is inaccessible to persons with disabilities. A recent study showed that PWDs were over four times more likely to report having experienced violence to people without disabilities and working age adults with disabilities were more likely to have experienced violence compared to older adults with disabilities[39]. This study reported that almost half (46.5%) of people with mental health conditions reported experiencing violence, which was significantly higher compared to people with other impairments. The health sector has initiated birth defect surveillance programme for early detection of disabilities at birth.

Soon after Maldives ratified the UN Convention on the Rights of the Persons with Disabilities (UNCRPD), on the national law Act 08/2010 was enacted. The Protection of the Rights of Persons with Disabilities and providing Financial Assistance Act (08/2010) set out the mandates of the government and state institution of the protection of the rights of the persons with disabilities (PWD) consistent with the purpose of the UNCRDP to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity. The Act 08/2010 provides that government ensures without discrimination and facilitates for PWDs ownership of land and assets, environmental action to facilitate easy access to services, information, access to transport and physical spaces, employment and access to jobs, education and training, healthcare and rehabilitation therapy, social protection including financial protection, social membership and social participation. Although a monthly disability allowance of MVR 2000 ($129.70) is provided to PWDs under the law, according to a disability study 2017-19[40], only 25.5% of the PWDs receive this benefit, and no impact on the quality of life was observed among those who received the benefit. The evidence thus suggests significant gaps in services to safeguard the rights, provide social protection and promote health and wellbeing of PWDs.

[35] Ministry of Health (2014). Health Sector Response to GBV.
[36] Institute of Research and Development (2021). Gender-based Violence during Covid-19 pandemic in the Maldives: an analysis of reported cases. UNFPA
[37] Household Income Expenditure Survey 2019. National Bureau of Statistics, Maldives
[38] Maldives 2019 Human Rights Report. Human Rights Commission of the Maldives [HRCM].
[39] Banks, et al. (2020). No One Left Behind? Comparing Poverty and Deprivation between People with and without Disabilities in the Maldives. Sustainability, 12(5), 2066.
[40] Access to Disability Benefits, 2019. London School of Hygiene and Tropical Medicine.

MENTAL HEALTH

Mental health is emerging as a major concern and the prevalent substance abuse disorders in the country has been associated with gaps in addressing mental health of the population across all age groups. Efforts have been undertaken to address and promote mental health and well-being of the population. In this regard, a mental health policy 2015-2025 has been in place, with the vision of "in Maldives, the mental wellbeing of people will be fostered with emphasis on prevention of mental disorders. People with mental disorders and their families will be treated with dignity and have access to quality care to promote recovery and flourish in the community, free from stigma and discrimination".

Mental health has been a priority area and a commitment of the current government administration in order to provide optimum mental health services to the population. In this regard, a mental health center has also been established to provide treatment and services through a holistic system at national. The COVID-19 pandemic made the need acute and highlights the gross inadequacies of the health system to provide mental health care. However, the country has a limited system for mental health with resource constraints and technical capacity with limited mental health service availability with fragmentation between available services. Further, mental health services are mainly concentrated at the central level with basic services available in the periphery. In Maldives, an institutional facility for people with mental and intellectual disabilities and disorders has been in place, which also cares for elderly people. The stigma and discrimination around mental health disorders are also prevailing issues in the country.

MIGRATION AND HEALTH

The 2014 Census defined 'migrant' as a person who at any time in their lives had changed his/her island of usual residence. In 2014, 44% Maldivians were migrants, had ever changed their residence[41], such change mostly involved moving to Male' due to its higher state of development compared to the atolls, particularly for health care, education and work. However, the population projections show that foreign migrants accounted for 32% of the resident population and are expected to increase steadily and by 2054, foreign migrants are expected to be more than half of the resident population of Maldives[42].

An expatriate, applying for a work permit in Maldives (whether for the first or subsequent times) is required to undergo a medical examination, which is now conducted post arrival in Maldives. Health screenings aim to detect whether migrants carry one of some 30 diseases, including tuberculosis (TB), HIV, dengue and hepatitis B. They are focused on determining migrants' fitness to work rather than educating them on how to avoid health risks and seek treatment. According to HPA records, between 2014 to 2016 no foreign migrant was diagnosed with malaria, filariasis and leprosy and the most was observed with hepatitis B (4,453), HIV (45) or TB (39)[43]. Despite provision of awareness materials and sessions, creating awareness and inculcating health care seeking behavior is a challenge given the low literacy of majority of the foreign migrants resident in the country.

Despite the obligation of employers to provide all expatriate workers with health insurance, the coverage provided, especially to lesser skilled workers, is typically the most basic. Furthermore, expatriate workers are usually not provided with information about their insurance package coverage in an easily understood language and may be confronted with higher charges than most Maldivians. In order to see a doctor in a public facility, migrants must have legal status[44]. Thus, apart from working and living in precarious conditions, irregular status migrants have severely limited access to primary care and practically no access to hospital treatment, even in emergency cases. Health conditions of irregular migrants are further exposed by the fact that, to avoid detection, many live and work in isolated areas. A number of migration stakeholders have advocated for granting migrants basic health care, regardless of legal status and is recognized in the Health Master Plan.

CLIMATE CHANGE AND DISASTER RISK

Climatic change and environmental outcomes are linked to the health of a population. Maldives is a country that is highly vulnerable to the changes in climate and environmental factors. An island on average covers one to two square kilometers of land area, and rest between 1-2 meters above sea level, and hence is highly susceptible to adverse climatic events. Because of its geography and as one of the most dispersed nations and its position, the country is highly vulnerable to the effects of climate change, including an increased risk of weather-related hazards and to process response. Cyclones and storms are unpredictable and do not follow a periodic pattern. As a result, flooding has become the most frequent emergency event for many islands, especially the northern and southern atolls are the worst affected[45]. This is associated with health risks particularly communicable diseases transmitted through water, food and insect vectors.

[41] Maldives Population and Housing Census 2014 – Statistical Release II: Migration. NBS
[42] Maldives population projections 2014-2054. National Bureau of statistic and UNFPA, Maldives
[43] Migration in Maldives, A country Profile 2018. IOM.
[44] ibid
[45] Health Emergency Operations Plan, Ministry of Health. Maldives

The rising sea levels and unfavorable climate outcomes can potentially exacerbate the existing issues and can lead to coastal flooding and salt-water interference, impacting fresh-water availability and quality in islands affection nutrition and food security at island level. However, climate related displacement is not common and a study conducted in 2013, 2% of the internal migrants identified climate change risks as a reason for migration[46].

POLLUTION

Urban air pollution is a growing concern in the greater Male' region. Hight population density, coupled with high-rise buildings in Male' has led to disruption of air circulation within the island. Air pollution in Male' is generally thought to stem from transport, waste and construction related activities. Continued open burning of waste in the nearby landfill island of Thilafushi also contributes to the deteriorating air quality of nearby islands.

Nation Action Plan on Air Pollutants notes that first year round assessment of air pollutants demonstrated that even at a remote location such as Hanimaadhoo, WHO recommended levels for fine particulate matter (PM2.5) were breached in 36% of the observed cases. It is noted that the largest sources of air pollutants and short-lived climate pollutants in the Maldives are transport and waste sectors, with electricity generation as a source for specific pollutants. However, electricity generation is the major source of the greenhouse gas carbon dioxide, and is simultaneously a major source of sulphur dioxide and nitrogen oxides. Waste sector is the major source of methane, and is also a major source of many other air pollutants[47]. Therefore, there is a potential for developing integrated strategies to simultaneously improve air quality and reduce the Maldives' contribution to global warming even further.

The country also has a Water and Sewerage Master Plan and Climate Resilient Water and Sanitation Safety plan. However, the practice of untreated sewage disposal into the sea creates health risk through contamination of the lagoon where it is common for the local population to swim and wade. Further, the use of pesticides and fertilizers in the country are not controlled and monitored and exposes the population to high level of nitrogen and other carcinogenic chemicals. However, there is lack of data and information on the extent of ground and food contamination with the use of chemicals for agriculture and insect control and their effects on resident population in the Maldives.

In an effort to reduce climate impact, the health sector has adopted a green and climate smart hospital policy and strategy, health national adaptation plan, health care waste management policy and strategy and mercury free policy.

CONFLICTS AND EMERGENCIES

The UN Special Rapporteur in the field of cultural rights, during her visit to the Maldives in 2019, noted that fundamentalism is one of the greatest threats to the rich culture of the Maldives, including Maldivian practices of Islam[48]. It was noted that fundamentalist ideology has resulted in violence, including the disappearances and killings of dissenting voices, with some fearing recurrence despite recent political changes. It was noted that the education system is a key sphere in which to promote tolerance and human rights, recommending the Maldives to introduce human rights education to emphasize the diversity of cultural expressions and the values of tolerance and mutual understanding.

During the last three years Human Right Commission of the Maldives has investigated 11 cases where children were allegedly subjected to torture. None of these cases have been forwarded for prosecution due to insufficient evidence[49]. There has been an increase in gang activity over the past ten years, particularly in greater Malé area with several attacks involving the use of edged weapons[50].

The Health Emergency Operations Plan identifies actions for readiness in the health system to handle mass causalities in accidents and natural disasters. However existing operational plans lack preparedness and response in situations of civil conflict or chemical, biological, radiological and neurological disasters. The country was not prepared for the COVID-19 pandemic that highlighted the gaps in current national and health sector emergency operations plans and weaknesses of the health system. The pandemic response identified that PHC based response is vital in responding to health emergencies.

[46] Stojanov, R., B. Duží and D. Němec. Slow-Onset Climate Change Impacts in Maldives and Population Movement from Islanders' Perspective. 2017. KNOMAD working paper 20, World Bank, Washington, D.C
[47] Nation Action Plan on Air Pollutants 2019. Ministry of Environment
[48] Maldives Common Country Analysis,2020. United Nations Maldives.
[49] Human Rights Commission of the Maldives (October, 2018). Submission from the Human Rights Commission of the Maldives for information on the initial report submitted by Maldives under Article 19 of Convention against Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment.
[50] Maldives 2020 Crime and Safety Report. Regional Security Office at the U.S. Embassy in Colombo, Sri Lanka.

RATIONALE FOR PHC REVIVAL

It is well known that most of the health care services can be provided at the PHC levels and a healthy workforce result in better productivity. Investing in PHC will reduce dependence of secondary and tertiary levels of care.

The economic benefits of PHC strengthening[51,52,53] are:

1. Return on investment from childhood immunization in low- and middle-income countries has been estimated at $44 for each $1 spent.
2. Vaccination against human papillomavirus (2 doses) of 9–13-year-old girls averts ≤ I$100 per Disability-adjusted life years (DALY)[54]
3. For every $1 spent on early childhood development interventions, the return on investment can be as high as $13.
4. Eliminating exposure to second-hand tobacco smoke in all indoor workplaces, public places, public transport averts ≤ I$100 per DALY.
5. Return of investment of US $7.5 for every US $1 per capita invested in cessation over a 10-year period (2021-2030)
6. Return of investment of US $13 for every US $1 per capita invested in reducing salt intake through the reformulation of food products to contain less salt and the setting of target levels for the amount of salt in foods and meals
7. Return on investment from Community Health Workers (CHWs) is estimated at $10 for every $1 spent in Sub-Saharan Africa.
8. Increasing life expectancy by 5 years, can increase gross domestic product (GDP) by upto to 0.58%.

In the Maldives, while the government executed a national health care financing scheme to primarily reduce out-of-pocket expenditure and progress towards UHC, the UHC coverage index published by Institute for Health Metrics Evaluation shows the progress towards UHC has stagnated with only 0.6% change over the period 2010-2019[55]. This indicates service gaps remain that limit progress towards universal health coverage and the findings of the National Health Accounts (NHA) 2015-17 points to the underlying cause.

At national level the density of human resource for health is quite high with estimates showing no gaps in doctors, nurses and midwives . However, there is a high reliance on expatriates on annual contracts, (expatriates form 64% of doctors and 41% of nurses), that affect continuous coverage and quality of services. The cadre of Community Health Workers (CHWs) are fully local, yet, the number of CHWs in the public health system has remained static at about 500 workers (with 54% females) over the last three years, while other cadres have grown . In terms of density of health workforce for the population, in 2015, there were 23 doctors. 66 nurses and 14 CHWs per 10,000 population, and by 2019 the number of doctors had increased to 44 per 10,000 population but CHWs had declined to 9.3 per 10,000 population.[58,59,60] This gap in CHWs, locals trained in PHC with skills in community-based service delivery, is a major concern for reviving PHC based services in the country.

[51] Primary Health Care Costing Roadmap. Proposals for consideration for developing Country level PHC Investment Cases, Fully Costed PHC Plan for UHC, Framework for Monitoring and Evaluation, and Implementation Plans. UNICEF Regional Office for South Asia. July 2019.
[52] 'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases, WHO.
https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf
[53] The global investment case for tobacco cessation, WHO,
https://apps.who.int/iris/rest/bitstreams/1390509/retrieve
[54] 'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases, WHO.
https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf
[55] Institute for Health Metrics Evaluation (IHME).
[56] WHO (2020). Decade for health workforce strengthening in the South-East Asia Region 2015–2024: midterm review of progress 2020. New Delhi: WHO, Regional Office for South-East Asia
(https://apps.who.int/iris/bitstream/handle/10665/333611/sea-rc73-7.pdf).
[57] Ministry of Health (2020). Health Statistics, 2017-2019. Male, Maldives.
[58] WHO (2020). Decade for health workforce strengthening in the South-East Asia Region 2015–2024: midterm review of progress 2020. New Delhi: WHO, Regional Office for South-East Asia (https://apps.who.int/iris/bitstream/handle/10665/333611/sea-rc73-7.pdf).
[59] Liverpool School of Tropical Medicine (LSTM) (2020). : Policy brief for the Maldives: Evaluation of South Asia's current community health worker policies and system support and their readiness for community health workers' expanding roles and responsibilities within post-Astana national health care strengthening plans. UNICEF.
[60] CHW pr population calculated using data from Maldives Health Statistics 2020 and population projections for the year 2019 by Maldives Bureau of statistics.

While there is a current need to address RMNCAH interventions for young people, the population structure indicates the country is moving towards and ageing population and the burden of disease estimates indicates the growing of NCDs and risk factors, that needs to be financed for effective health gains. However, the ongoing NHA 2018-2020 production shows less than 1% spending on preventive health interventions, a further reduction from about 2% observed in 2015-2017 NHA.

Further the COVID-19 pandemic demonstrated the central of PHC in effective delivery of emergency response and sustaining health services and the main gap identified was the gaps in implementation of PHC approach in the organization and delivery of health services.

The government's commitment to Astana Declaration and the SDG health related goals and Agenda 2030 is reflected in the SAP, national recovery plans and policy reforms, and budget of 2021 and 2022. Other State commitments to international conventions such as Framework Convention on Tobacco Control and global initiates on maternal, adolescent, child and newborn health, NCDs can be accelerated with investments in PHC, and committed to the implementation of the WHO South East Asia Regional strategy 2022-2030. Further reviving PHC is identified as one of the priority policy initiatives of the government in the pandemic recovery and resilient plan of the Maldives. This provides a unique opportunity to provide evidence on PHC packages and policy interventions relevant for the Maldives that must be invested to progress towards achieving UHC as stipulated in the SDG of the Agenda 2030.

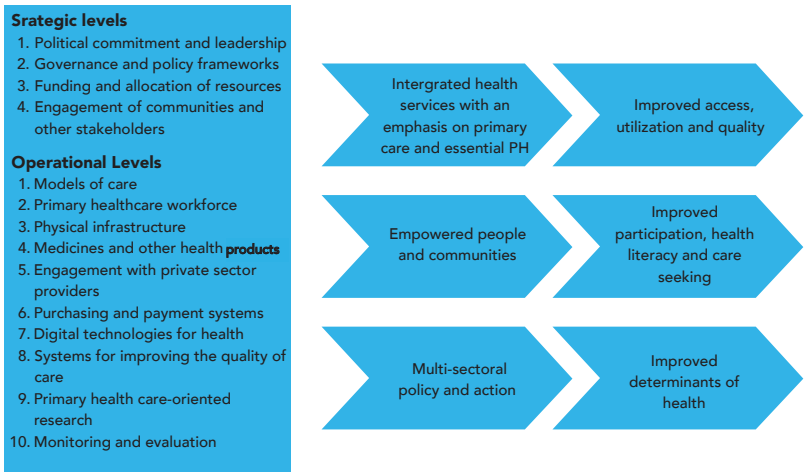


FIGURE 11: PHC APPROACH: THEORY OF CHANGE
(Operational Framework for PHC, WHO)[61]

The theory of change provides provided by the WHO in the operation framework for PHC from the basis in identifying the package of services and policy interventions for the investment case.

APPROACH

The methodology follows the UNICEF Regional Office for South Asia (ROSA) road map for developing the PHC investment case adapted to the local context. It involved establishing institutional mechanisms to steer and build consensus of the PHC packages as well as technical input to the develop interventions, costing tools, cost categories and indicators. The purpose of this exercise is to support the government to estimate the costs of PHC to guide national and international advocacy for increased investments to PHC as a core contributor for accelerating progress for UHC consistent with the leave no one behind Agenda 2030.

PROCESS

The steps followed for conducting this exercise included situational analysis, reviewing burden of diseases to meet the changing needs of the health systems, identification of key stakeholders including constitution of National Steering Committee (NSG), Technical committee (TC), to develop a framework for integrated people-centered health services, management approaches for costing were used (e.g., delivery points focused planning and rational allocation of resources).

This is followed by conducting series of workshops and sub-group activities using life cycle approach and continuum of care on maternal, newborn and child health, adolescent, youth and adulthood health and elderly health, and finally One health costing tool and supplementary excel tools are used. The health and non-health determinants were considered in planning; therefore, an integrated and multi-sectoral approach has been envisioned. In addition, PHC costing exercise also reviewed current situation of discrimination, abuse and violence against women, children and adolescents, challenges in conflicts, migration, climate instability, mental health, and air pollution[62].

[61] Operational Framework for Primary Health Care, WHO.
https://www.who.int/publications/i/item/9789240017832
[62] Every Women Every Child Progress Report 2020.
https://protect.everywomaneverychild.org Accessed July 15, 2021

This investment case will be followed by review of existing monitoring and evaluation framework, Health Management Information System (HMIS) and DHIS, and later an implementation plan will be developed for securing funds needed. A series of consultative session with steering and working sessions technical committee are held to develop key section of the investment case. See annexure for details and composition of the Steering and technical committee.

Each step involved desk review of published literature and working documents including policies and strategies for service delivery as well as technical strategic plan. As such the Strategic action Plan of the government, post pandemic New Policy Initiatives, Maldives Health Services Strategy, RMNCAH strategy, NCD control strategy and Public Health roadmap are key documents reviewed. See annexure for documents reviewed.

FIGURE 12: STEPS IN DEVELOPING THE PHC INVESTMENT CASE

Stakeholder consultations are held through a series of consultative workshops and intersectoral sub-groups consultations to develop consensus on intersectoral interventions identified in the PHC package of services. The Figure 12 summarizes the steps un the methodology used to develop PHC investment case is shown below.

PHC VISION, OBJECTIVES AND KEY REFORMS

VISION

Maldives PHC Vision is based on the implementation of a full spectrum of essential, quality health services ranging from health promotion to preventions, treatment, rehabilitation and palliative care.

AIM

The aim is to accelerate progress towards UHC for the resident population through improved access to PHC based services in health service delivery to improve healthy years lived.

OBJECTIVES

Overall objective of PHC Investment Case is to strengthen the delivery of primary health care in the country and contribute to the public health revitalization, PHC reform processes and achieve efficient UHC in the

Maldives. The key objectives are to:

1. To increase the UHC effective coverage index from 67%[63] to 80% by 2030.
2. To increase government health spending on PHC interventions[64] by 2.5% annually to reach 20% by 2030.

PHC MODEL FOR SERVICE DELIVERY

The PHC reform policies has proposed an integrated team-based approach to primary care delivery in the periphery at health centres as well as in urban residential areas at Dhamanaveshi. As such the PHC team that will deliver the package of essential services are depicted in figure 8[65]. The island Primary Health Care Teams are the implementers of day-to-day services through PHC approach.

The number of teams per health facility will be based on the resident population of the island, proportional to the population. In general, the PHC teams working in the field will be comprised of a total of 4 members for each island; *Community Health Worker (CHW)* as the PHC team lead, coordinating within the team and other sectors, *medical doctor* for providing clinical care, *two nurses or CHWs*, where one would take up the area of RMNCAH and the other will be assigned roles within community for mental health and disability therapy support as well as providing care for elderly. All team members will have the responsibility of public awareness and life skills development of the people of the island on their focused area of work.

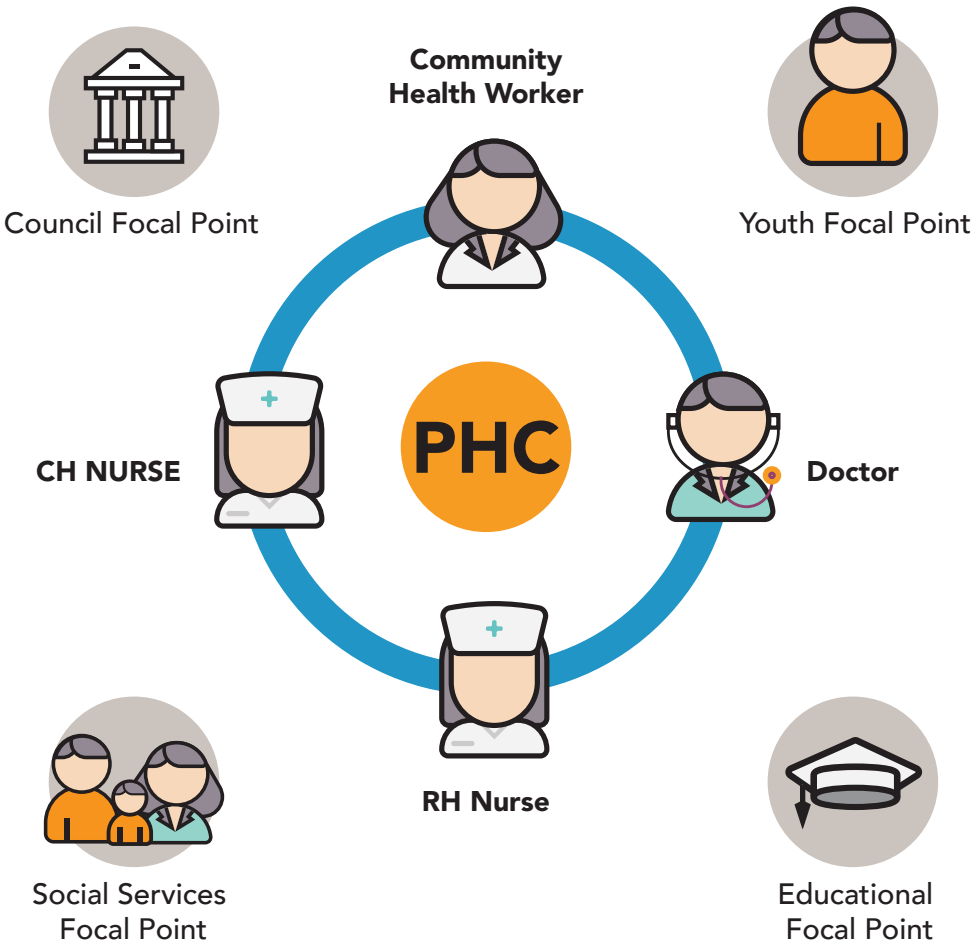


FIGURE 13: PHC TEAM TO PROVIDE PEOPLE-CENTERED ESSENTIAL SERVICES

The PHC revitalization focus is not envisaged only at primary care level, but revisiting the approach to service delivery at hospitals, moving form a doctor-led service to a team-based integrated service delivery approach. As such a move towards increasing patient-group approach by holding polyclinics for ambulatory care with designated days and time slots for different clinic sessions is expected. For example, instead of holding OPD appointments for specialists, ANC/ Postnatal care (PNC) clinics, well child clinic, well women clinic, NCD clinics will be held where the PHC team along with the specialist come together to provide patient-center wholistic care. In addition, the PHC team lead with the

[63] The Universal Health Coverage (UHC) effective coverage index aims to represent service coverage across population health needs and how much these services could contribute to improved health. IHME. https://www.healthdata.org/maldives

[64] National health accounts 2018-2020 (draft on production) indicates less than 1% on preventive health services. Ministry of Health, Maldives.

[65] Modified from the draft policy document on Maldives Health Services, 2021. Ministry of Health.

rest of the team will conduct proactive surveillance for potential disease outbreaks and increase in NCD burden. The service delivery will be more focused on health services reaching out to communities instead of patients approaching the health centres for care and additionally, empowering the communities so that they are able to plan out their health care seeking based on their social and financial capabilities.

It is recognized that the implementation of this team, however, requires policy and management commitment to recruit and retain local human resources, particular at the primary care level facilities. Further flexibility to adjust the team composition based on the population size is needed to effectively manage the delivery of the PHC packages with available human resources.

ESSENTIAL PACKAGES OF SERVICES TO DELIVER THROUGH PHC MODEL

An important underlying principle in defining the package of services is that given the geographic dispersion of the inhabited islands and limited human resources, certain basic services that encompass the three pillars of PHC must be delivered through government health facilities irrespective of the level of service. This is because the organization of health service delivery integrated primary care and preventive public health services even at facilities providing higher levels of care through their public health unit. For instance, some islands may have a tertiary care facility, but not a primary care facility, hence the basic package of services are expected to be delivered from the tertiary care facility

The essential package of services is first drafted based on the document review, current services delivered at each level of service and with the direction of the Technical and Steering committee on the elements of policy changes taking place with regard to revival of PHC. A draft of the proposed package of services was developed and shared with the health care providers at different service delivery levels as a feedback tool (in the form of a google form). The package was also shared with selected local councils and CSOs (or Women development committee, Community Support Group) at each level of service. The feedback was discussed at joint meetings of the Technical committee Steering committee, revised and validated at the National workshop in December 2021 with stakeholders.

Table 4: Package of essential services for PHC based delivery different level of services

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
MATERNAL/NEWBORN AND REPRODUCTIVE HEALTH				
FAMILY PLANNING				
PILL - STANDARD DAILY REGIMEN	Y	Y	Y	Y
PILL - PROGESTIN ONLY	Y	Y	Y	Y
PILL - PERI-COITAL CONTRACEPTION (PCC)	Y	Y	Y	Y
CONDOM - MALE	Y	Y	Y	Y
CONDOM - FEMALE	Y	Y	Y	Y
INJECTABLE - 3 MONTH (DEPO PROVERA)	N	N	Y	Y
IUD - COPPER-T 380-A IUD (10 YEARS)	N	N	Y	Y
IMPLANT - IMPLANON (3 YEARS)	N	N	N	Y
IMPLANT - JADELLE (5 YEARS)	N	N	N	Y
FEMALE STERILIZATION	N	N	N	Y
MALE STERILIZATION	N	N	N	Y
LAM	N	N	N	Y
SDM	N	N	N	Y
PERIODIC ABSTINENCE	Y	Y	Y	Y
WITHDRAWAL	Y	Y	Y	Y
TRADITIONAL (NOT SPECIFIED)	Y	Y	Y	Y
OTHER CONTRACEPTIVES	N	N	N	Y

[66] 'N' indicates that these interventions are not delivered at that level, but as required basic emergency car will be given to stabilise and referred to the relevant higher level of service delivery. 'NA' indicates not applicable. 'Y' indicates these interventions will be delivered

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
SAFE ABORTION				
SAFE ABORTION	N	NA	Y	Y
POST-ABORTION CASE MANAGEMENT	N	NA	Y	Y
ECTOPIC CASE MANAGEMENT	N	NA	N	Y
PREGNANCY CARE				
TETANUS TOXOID (PREGNANT WOMEN)	N	NA	Y	Y
SYPHILIS DETECTION AND TREATMENT (PREGNANT WOMEN)	N	NA	Y	Y
PREGNANCY CARE - TREATMENT OF PREGNANCY COMPLICATIONS				
HYPERTENSIVE DISORDER CASE MANAGEMENT	Y	NA	Y	Y
MANAGEMENT OF PRE-ECLAMPSIA (MAGNESIUM SULPHATE)	N	NA	Y	Y
MANAGEMENT OF OTHER PREGNANCY COMPLICATIONS	N	NA	N	Y
DEWORMING (PREGNANT WOMEN)	N	NA	N	N
UTEROTONICS FOR POSTPARTUM HAEMORRHAGE	N	NA	Y	Y
LABOUR AND DELIVERY MANAGEMENT	N	NA	Y	Y
PRE-REFERRAL MANAGEMENT OF LABOUR COMPLICATIONS	N	NA	Y	Y
MgSO4 FOR ECLAMPSIA	N	NA	Y	Y
NEONATAL RESUSCITATION	N	NA	Y	Y
TREATMENT OF LOCAL INFECTIONS (NEWBORN)	N	NA	Y	Y
MANAGEMENT OF OBSTRUCTED LABOUR	N	NA	N	Y
KANGAROO MOTHER CARE	Y	Y	Y	Y
FEEDING COUNSELLING AND SUPPORT FOR LOW-BIRTH-WEIGHT INFANTS	Y	Y	Y	Y
ANTIBIOTICS FOR MATERNAL SEPSIS	N	NA	Y	Y
MANUAL REMOVAL OF PLACENTA	N	NA	N	Y
REMOVAL OF RETAINED PRODUCTS OF CONCEPTION	N	NA	N	Y
BLOOD TRANSFUSION	N	NA	Y	Y
CLEAN BIRTH ENVIRONMENT	Y	NA	Y	Y
ANTENATAL CORTICOSTEROIDS FOR PRETERM LABOUR	N	NA	Y	Y
ANTIBIOTICS FOR PRETERM OR PROLONGED PROM	N	NA	N	Y
INDUCTION OF LABOUR FOR PREGNANCIES LASTING 41+ WEEKS	N	NA	Y	Y
POSTPARTUM CARE				
MATERNAL SEPSIS CASE MANAGEMENT	N	NA	N	Y
NEWBORN SEPSIS - FULL SUPPORTIVE CARE	N	NA	N	Y
NEWBORN SEPSIS - INJECTABLE ANTIBIOTICS	N	NA	N	Y
MASTITIS	N	NA	Y	Y
TREATMENT OF POSTPARTUM HAEMORRHAGE	N	NA	Y	Y
CHLORHEXIDINE	N	NA	N	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
OTHER SEXUAL AND REPRODUCTIVE HEALTH				
TREATMENT OF URINARY TRACT INFECTION (UTI)	Y	NA	Y	Y
CERVICAL CANCER SCREENING	Y	Y	Y	Y
IDENTIFICATION AND MANAGEMENT OF INFERTILITY	N	NA	Y	Y
TREATMENT OF SYPHILIS	Y	NA	Y	Y
TREATMENT OF GONORRHOEA	Y	NA	Y	Y
TREATMENT OF CHLAMYDIA	Y	NA	Y	Y
TREATMENT OF TRICHOMONIASIS	Y	NA	Y	Y
TREATMENT OF PID (PELVIC INFLAMMATORY DISEASE)	Y	NA	Y	Y
CHILD HEALTH				
GROWTH MONITORING	Y	Y	Y	Y
MONITORING DEVELOPMENT MILESTONES	Y	Y	Y	Y
DEWORMING (CHILDREN)	Y	N	Y	Y
ZINC SUPPLEMENTATION	Y	N	Y	Y
ORS	Y	NA	Y	Y
ZINC (DIARRHOEA TREATMENT)	Y	NA	Y	Y
ANTIBIOTICS FOR TREATMENT OF DYSENTERY	N	NA	Y	Y
TREATMENT OF SEVERE DIARRHOEA	N	NA	Y	Y
PNEUMONIA TREATMENT (CHILDREN)	N	NA	Y	Y
TREATMENT OF SEVERE PNEUMONIA	N	NA	Y	Y
ADOLESCENT HEALTH				
VISION SCREENING (SCHOOL BASED)	Y	Y	Y	Y
TD VACCINE CO-DELIVERY	Y	NA	Y	Y
INJURY CARE DUE TO INTIMATE PARTNER VIOLENCE: PHYSICAL ASSAULT	Y	NA	Y	Y
INJURY CARE DUE TO INTIMATE PARTNER VIOLENCE: SEXUAL ASSAULT	Y	NA	Y	Y
FAMILY PLANNING (CONTRACEPTIVES) FOR THOSE NOT IN UNION OR BELOW 15 YEARS OF AGE	Y	NA	Y	Y
INTEGRATED MANAGEMENT OF COMMON CONDITIONS IN PRIMARY CARE	Y	NA	Y	Y
PRECONCEPTION INTERVENTIONS	Y	Y	Y	Y
NUTRITION				
INTERMITTENT IRON-FOLIC ACID SUPPLEMENTATION (MENSTRUATING GIRLS AND WOMEN WHERE ANAEMIA IS PUBLIC HEALTH PROBLEM)	Y	Y	Y	Y
DAILY IRON AND FOLIC ACID SUPPLEMENTATION (PREGNANT WOMEN)	Y	NA	Y	Y
BREASTFEEDING COUNSELLING AND SUPPORT	Y	Y	Y	Y
COMPLEMENTARY FEEDING COUNSELLING AND SUPPORT	Y	Y	Y	Y
MANAGEMENT OF MODERATE ACUTE MALNUTRITION (CHILDREN)	Y	NA	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
ADVICE AND CARE FOR ADOLESCENTS WITH LOW BMI (SCHOOL BASED)	Y	Y	Y	Y
IMMUNIZATION				
MEASLES VACCINE	Y	NA	Y	Y
DPT/PENTAVALENT VACCINE	Y	NA	Y	Y
HIB VACCINE	Y	NA	Y	Y
HEP B VACCINE TO PREVENT LIVER CANCER	Y	NA	Y	Y
POLIO VACCINE	Y	NA	Y	Y
BCG VACCINE	Y	NA	Y	Y
HPV VACCINE	Y	NA	Y	Y
NEGLECTED TROPICAL DISEASES				
LEPROSY MANAGEMENT AND SURVEILLANCE	Y	NA	Y	Y
VECTOR CONTROL	Y	Y	Y	Y
DENGUE				
INDOOR RESIDUAL SPRAYING	N	NA	N	N
LARVICIDING	Y	Y	Y	Y
BIOLOGICAL VECTOR CONTROL	Y	Y	Y	Y
DIAGNOSIS (OTHER FEVERS)	Y	NA	Y	Y
TREATMENT (CHILDREN 5-14)	Y	Y	Y	Y
TREATMENT (ADULTS)	Y	Y	Y	Y
TB				
DIAGNOSIS WITH MICROSCOPY: PASSIVE TB CASE FINDING, CHILD CASES	Y	NA	Y	Y
DIAGNOSIS WITH MICROSCOPY: PASSIVE TB CASE FINDING, HIV-POSITIVE CASES	Y	NA	Y	Y
INITIAL DIAGNOSIS WITH XPERT: PASSIVE TB CASE FINDING, HIV-NEGATIVE ADULTS	N	NA	Y	Y
INITIAL DIAGNOSIS WITH XPERT: PASSIVE TB CASE FINDING, CHILD CASES	N	NA	Y	Y
SCREENING WITH X-RAYS: PASSIVE TB CASE FINDING, HIV-POSITIVE ADULTS	N	NA	Y	Y
DIAGNOSIS WITH X-RAYS: PASSIVE TB CASE FINDING, CHILD CASES	N	NA	Y	Y
DIAGNOSIS WITH X-RAYS: PASSIVE TB CASE FINDING, HIV-POSITIVE CASES	N	NA	Y	Y
FIRST-LINE TB TREATMENT: INITIAL TREATMENT FOR ADULTS	Y	NA	Y	Y
FIRST-LINE TB TREATMENT: INITIAL TREATMENT FOR CHILDREN	Y	NA	Y	Y
MDR-TB TREATMENT	N	NA	Y	Y
XDR-TB TREATMENT	N	NA	Y	Y
ACTIVE CASE FINDING FOR HOUSEHOLDS	Y	NA	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
ACTIVE CASE FINDING IN HIGH-RISK GROUPS	Y	NA	Y	Y
PRE-TPT EVALUATION OF HOUSEHOLD CONTACTS	N	NA	Y	Y
PRE-TPT EVALUATION OF HIGH-RISK GROUPS	N	NA	Y	Y
TESTING FOR LTBI AMONG CHILD HOUSEHOLD CONTACTS	N	NA	Y	Y
TESTING FOR LTBI AMONG ADULT HOUSEHOLD CONTACTS	N	NA	Y	Y
TESTING FOR LTBI AMONG CHILDREN IN HIGH-RISK GROUPS	N	NA	Y	Y
TESTING FOR LTBI AMONG ADULTS IN HIGH-RISK GROUPS	N	NA	Y	Y
HIV/AIDS				
YOUTH FOCUSED INTERVENTIONS - IN-SCHOOL	Y	Y	Y	Y
WORKPLACE PROGRAMS	Y	Y	Y	Y
BLOOD SAFETY	Y	NA	Y	Y
IDU: OUTREACH	Y	Y	Y	N
INTERVENTIONS FOCUSED ON FEMALE SEX WORKERS	Y	Y	Y	Y
INTERVENTIONS FOCUSED ON MALE SEX WORKERS	Y	Y	Y	Y
INTERVENTIONS FOCUSED ON MEN WHO HAVE SEX WITH MEN	Y	Y	Y	Y
YOUTH FOCUSED INTERVENTIONS - OUT-OF-SCHOOL	Y	Y	N	N
VOLUNTARY COUNSELLING AND TESTING	Y	Y	Y	Y
CONDOMS	Y	Y	Y	Y
PMTCT	Y	Y	Y	Y
POST-EXPOSURE PROPHYLAXIS	Y	NA	Y	Y
ART (FIRST-LINE TREATMENT) FOR MEN AND WOMEN	Y	NA	Y	Y
ART (SECOND-LINE TREATMENT) FOR ADULTS	N	NA	Y	Y
SCREEN HIV+ CASES FOR TB	Y	NA	Y	Y
ART (+CPT) FOR TB HIV+ PATIENTS	N	NA	Y	Y
HIV PREVENTION FOR TB PATIENTS	Y	NA	Y	Y
NUTRITIONAL CARE AND SUPPORT FOR ELDERLY	Y	Y	Y	Y
NON-COMMUNICABLE DISEASES				
CVD & DIABETES				
SCREENING FOR RISK OF CVD/DIABETES	Y	Y	Y	Y
FOLLOW-UP CARE FOR THOSE AT LOW RISK OF CVD/DIABETES (ABSOLUTE RISK: 10-20%)	Y	N	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
TREATMENT FOR THOSE WITH VERY HIGH CHOLESTEROL BUT LOW ABSOLUTE RISK OF CVD/DIABETES	Y	NA	Y	Y
TREATMENT FOR THOSE WITH HIGH BLOOD PRESSURE BUT LOW ABSOLUTE RISK OF CVD/ DIABETES	Y	NA	Y	Y
TREATMENT FOR THOSE WITH ABSOLUTE RISK OF CVD/DIABETES 20-30%	Y	NA	Y	Y
TREATMENT FOR THOSE WITH HIGH ABSOLUTE RISK OF CVD/DIABETES	Y	NA	Y	Y
TREATMENT OF NEW CASES OF ACUTE MYOCARDIAL INFARCTION (AMI) WITH ASPIRIN	N	NA	Y	Y
TREATMENT OF CASES WITH ESTABLISHED ISCHAEMIC HEART DISEASE (IHD)	N	NA	Y	Y
TREATMENT FOR THOSE WITH ESTABLISHED CEREBROVASCULAR DISEASE AND POST STROKE	N	NA	Y	Y
TREATMENT OF CASES WITH RHEUMATIC HEART DISEASE (WITH BENZATHINE PENICILLIN)	N	NA	Y	Y
STANDARD GLYCAEMIC CONTROL	Y	NA	Y	Y
RETINOPATHY SCREENING AND PHOTOCOAGULATION	Y	Y	Y	Y
NEUROPATHY SCREENING AND PREVENTIVE FOOT CARE	Y	Y	Y	Y
CVD& DIABETES AWARENESS	Y	Y	Y	Y
BREAST CANCER				
BASIC BREAST CANCER AWARENESS	Y	Y	Y	Y
SCREENING: CLINICAL BREAST EXAM	Y	Y	Y	Y
SCREENING: MAMMOGRAPHY	N	Y	N	Y
BREAST CANCER TREATMENT: STAGE 1	N	NA	N	Y
POST-TREATMENT SURVEILLANCE FOR BREAST CANCER PATIENTS	Y	NA	N	Y
BASIC PALLIATIVE CARE FOR BREAST CANCER	Y	NA	Y	Y
AWARENESS ON BREAST CANCER	Y	Y	Y	Y
CERVICAL CANCER				
HPV DNA TEST	N	Y	Y	Y
VISUAL INSPECTION WITH ACETIC ACID (VIA)	Y	Y	Y	Y
PAPANICOLAOU TEST (PAP SMEAR)	Y	Y	Y	Y
CERVICAL CANCER TREATMENT: STAGE I	N	NA	N	Y
POST TREATMENT SURVEILLANCE FOR CERVICAL CANCER	Y	NA	Y	Y
BASIC PALLIATIVE CARE FOR CERVICAL CANCER	Y	NA	Y	Y
AWARENESS ON CERVICAL CANCER	Y	Y	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
COLORECTAL CANCER				
SCREENING: FAECAL OCCULT BLOOD TESTING	Y	NA	Y	Y
SCREENING: COLONOSCOPY	N	Y	N	Y
COLORECTAL CANCER TREATMENT: STAGE I	N	NA	N	Y
POST TREATMENT SURVEILLANCE FOR COLORECTAL CANCER	Y	NA	Y	Y
BASIC PALLIATIVE CARE FOR COLORECTAL CANCER	Y	NA	Y	Y
AWARENESS ON COLORECTAL CANCER	Y	Y	Y	Y
ORAL CARE AND CANCER				
DENTAL CLEANING AND PREVENTIVE CARE (INCLUDING SCHOOL BASED)	N	Y	Y	Y
AWARENESS ON ORAL CANCER	Y	Y	Y	Y
RESPIRATORY DISEASE				
ASTHMA: INHALED SHORT ACTING BETA AGONIST FOR INTERMITTENT ASTHMA	Y	NA	Y	Y
ASTHMA: LOW DOSE INHALED BECLOMETASONE + SABA	N	NA	Y	Y
COPD: SMOKING CESSATION	Y	NA	Y	Y
COPD: INHALED SALBUTAMOL	Y	NA	Y	Y
COPD: LOW-DOSE ORAL THEOPHYLLINE	N	NA	Y	Y
COPD: IPRATROPIUM INHALER	N	NA	Y	Y
COPD: EXACERBATION TREATMENT WITH OXYGEN	Y	NA	Y	Y
AWARENESS ON LUNG CANCER	Y	Y	Y	Y
RISK FACTORS				
TOBACCO: MONITOR TOBACCO USE/ PREVENTION POLICIES	Y	Y	Y	Y
TOBACCO: PROTECT PEOPLE FROM TOBACCO SMOKE	Y	Y	Y	Y
TOBACCO: OFFER TO HELP QUIT TOBACCO USE: MCESSATION	Y	NA	Y	Y
TOBACCO: WARN ABOUT DANGER: MASS MEDIA CAMPAIGN	Y	Y	Y	Y
TOBACCO: ENFORCE YOUTH ACCESS RESTRICTION	Y	Y	Y	Y
ALCOHOL: SCREENING AND BRIEF INTERVENTION FOR HAZARDOUS AND HARMFUL ALCOHOL USE	N	NA	Y	Y
PHYSICAL INACTIVITY: BRIEF ADVICE AS PART OF ROUTINE CARE	Y	NA	Y	Y
PHYSICAL INACTIVITY: AWARENESS CAMPAIGNS TO ENCOURAGE INCREASED PHYSICAL ACTIVITY	Y	Y	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
SODIUM: SURVEILLANCE	Y	NA	Y	Y
SODIUM: KNOWLEDGE: EDUCATION AND COMMUNICATION	Y	Y	Y	Y
SODIUM: ENVIRONMENT: SALT REDUCTION STRATEGIES IN COMMUNITY-BASED EATING SPACES	Y	Y	Y	Y
REDUCING OBESITY: AWARENESS ON FOOD SELECTION TO REDUCE UNSATURATED AND TRANSFAT	Y	Y	Y	Y
MENTAL, NEUROLOGICAL, AND SUBSTANCE USE DISORDERS				
ANXIETY DISORDERS				
BASIC PSYCHOSOCIAL TREATMENT FOR ANXIETY DISORDERS (MILD CASES)	Y	Y	Y	Y
BASIC PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION FOR ANXIETY DISORDERS (MODERATE-SEVERE CASES)	N	Y	Y	Y
INTENSIVE PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION FOR ANXIETY DISORDERS (MODERATE-SEVERE CASES)	N	NA	N	Y
DEPRESSION				
BASIC PSYCHOSOCIAL TREATMENT FOR MILD DEPRESSION	Y	Y	Y	Y
BASIC PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION OF FIRST EPISODE MODERATE-SEVERE CASES	N	Y	Y	Y
INTENSIVE PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION OF FIRST EPISODE MODERATE-SEVERE CASES	N	NA	N	Y
PSYCHOSOCIAL CARE FOR PERI-NATAL DEPRESSION	Y	NA	Y	Y
PSYCHOSIS				
BASIC PSYCHOSOCIAL SUPPORT AND ANTI-PSYCHOTIC MEDICATION	Y	NA	Y	Y
INTENSIVE PSYCHOSOCIAL SUPPORT AND ANTI-PSYCHOTIC MEDICATION	N	NA	Y	Y
BIPOLAR DISORDER				
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR BIPOLAR DISORDER, PLUS MOOD-STABILIZING MEDICATION	Y	Y	Y	Y
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR BIPOLAR DISORDER, PLUS MOOD-STABILIZING MEDICATION	N	NA	Y	Y
EPILEPSY				
BASIC PSYCHOSOCIAL SUPPORT, ADVICE, AND FOLLOW-UP, PLUS ANTI-EPILEPTIC MEDICATION	Y	Y	Y	Y

PHC INTERVENTION PACKAGES[66]	HEALTH CENTER L1-2	OUTREACH (SCHOOL, WORKPLACE, COMMUNITY)	HEALTH CENTER L3-4 & URBAN HC	HOSPITALS
DEVELOPMENTAL DISORDERS				
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR DEVELOPMENTAL DISORDERS	Y	Y	Y	Y
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR DEVELOPMENTAL DISORDERS	N	NA	N	Y
CONDUCT DISORDERS				
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR BEHAVIOURAL DISORDERS	Y	Y	Y	Y
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR BEHAVIOURAL DISORDERS	N	Y	N	Y
FAMILY PSYCHOEDUCATION (ADHD)	Y	Y	Y	Y
FAMILY PSYCHOEDUCATION (CONDUCT DISORDER)	Y	Y	Y	Y
ATTENTION DISORDERS				
METHYLPHENIDATE MEDICATION	N	NA	Y	Y
DEMENTIA				
ASSESSMENT, DIAGNOSIS, ADVICE, AND FOLLOW-UP FOR DEMENTIA	Y	Y	Y	Y
PHARMACOLOGICAL TREATMENT OF DEMENTIA	N	NA	Y	Y
DRUG USE/DEPENDENCE				
IDENTIFICATION AND ASSESSMENT OF NEW CASES OF DRUG USE/DEPENDENCE	Y	Y	Y	Y
BRIEF INTERVENTIONS AND FOLLOW-UP FOR DRUG USE/DEPENDENCE	Y	NA	Y	Y
SELF-HARM/SUICIDE				
ASSESS AND CARE FOR PERSON WITH SELF-HARM	Y	Y	Y	Y
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR SELF-HARM/SUICIDE	Y	Y	Y	Y
MENTAL HEALTH AWARENESS (SCHOOL BASED)	Y	Y	Y	Y
MENTAL HEALTH AWARENESS AND ASSESSMENT (INSTITUTION BASED - E.G. STATE CARE)	Y	Y	Y	Y

'N' indicates that these interventions are not delivered at that level, but as required basic emergency car will be given to stabilise and referred to the relevant higher level of service delivery. 'NA' indicates not applicable. 'Y' indicates these interventions will be delivered

PHC GAP AND BOTTLENECK ANALYSIS

The gap and bottleneck analysis were conducted with the technical and steering committee members at a working session, followed by individual discussion with key areas. For example, with human resources managers and programme managers and policy actors at Ministry of Health. This was followed by national consultation to validate the intervention areas by cost categories.

At the first stage, the objective was to identify intervention areas for cost categories and bottlenecks in creating an enabling environment for implementing the reform. The findings from the consultations are presented in Table 5 and 6.

GAPS IN COST CATEGORIES

Table 5: Gap analysis for reform in the cost categories

COST CATEGORIES	GAPS
HUMAN RESOURCES	
PHC TEAM LEADS (LOCAL PHC/PUBLIC HEALTH TRAINED)	Need stocktake of capacity in the government health facilities and reallocation (current distribution is not proportional to the requirement). Financial incentives as noted in rural retention policy; carrier paths for horizontal and vertical progression; may need additional training - local training possible; need job allocation in the structure of health facility.
NURSES (TRAINED IN RH AND MIDWIFERY)	Need stocktake of capacity in the government health facilities and reallocation (current distribution is not proportional to the requirement). Financial incentives as noted in rural retention policy; career paths for horizontal and vertical progression; may need additions training - local training possible; need job allocation in the structure of health facility.
PHC TRAINED NURSE/CHW	Need stock take of capacity in the government health facilities and reallocation of PHC and public health trained staff (current distribution is not proportional to the requirement). Ensure HR resource allocation is according to population n size and health needs; Role clarity and task shifting to be introduced; financial incentives as noted in rural retention policy; may need additions training - local training possible; need job allocation in the structure of health facility.
THERAPISTS (PSYCHOLOGICAL/ OCCUPATIONAL, PHYSICAL, SPEECH)	It is not possible to provide therapists. The intention is that the PHC team be able to detect, refer and then provide followup therapy as instructed by a therapy professional in all therapy areas, physical occupational, speech – this is a new cadre proposed; possible to train nurses and CHWs as therapists with add on modules (see also the proposed cadres in the mental health action plan for atolls); need job allocation in the structure of health facility.
DOCTOR	Include PHC work in the job descriptions of current medical doctors in service. Parallelly emphasize on local capacity development (scholarships for doctors of public health/family doctors/GPs; reduce expatriate dependence – provide scholarships with incentive (rural retention policy) for serving at primary care facilities.
ROLE CLARITY FOR PHC TEAMS	Define roles for each team member and terms of reference for their job descriptions and performance assessments.
TRAINING & CURRICULUM	E.g. need to review PHC & nursing curriculum against the role allocation; add on modules (health promotion, particualry risk factor reduction for NCDs, early detection of NCD, malnutrition and CDs midwifery, community health, health promotion, psychosocial first aid, occupation therapy, physiotherapy etc) need to be offered to meet the PHC team requirement of the government health services.
HEALTH PROMOTION, COMMUNICATION & INFORMATION STAFF	Staff with BCC skills focusing on risk factor reduction, designer, media monitoring specialist; use of public health statistics. Need permanent technical staff (public health experts) allocation at HPA and health facility structures (atleast regional level); salary; training in these areas – can have local training.

COST CATEGORIES	GAPS
PLANNING, MANAGEMENT, SUPERVISION AND MONITORING	
PLANNING	Need to invest in increasing knowledge on PHC components for all managers, PA, policy makers; training on result based planning; organisational structure of health facilities needs revisions; revision of criteria and grading of health facilies to reflect the new policies, include teaching/supervising at hospitals with academic affairs unit depending on the number of students present for their practical postings.
BUDGETING	Invest in training for programme based budgeting; analysis of resource allocations by service categories (prevention, curative, rehabilitation). Decentralise budget expenditure to atoll level; policy to review budget allocation for efficiency and redirect allocation to health promotion, preventive PHC pacakge interventions; programme budgeting planned for next year should ensure PHC based delivery.
SUPERVISION	need to train supervision teams; reorient to supportive supervision with a framework within the PHC delivery system, not only audits of standards; budget for regular supervision visits at local levels.
MANAGEMENT	Need orientation of senior management including doctor and nurses on PHC based service delivery – include all three pillars of PHC, integrated team based service delivery /polyclinic style/ wholistic care. Invest in change management – inclusive planning of this holistic change; procurement practices.
MONITORING	Investment for continuous monitoring of implementation for desired change in service delivery approach – training, visits
PROCUREMENT	Prioritise essential medicine and equipment list (see minimum list of equipment's for each level of facilities); implementing maximum retail price and bulk procurement options, reduce investment in machinery and invest in HR, training staff for efficient procurement processes and reducing wastage.
COMMUNICATIONS AND COMMUNITY ENGAGEMENT	
HEALTH PROMOTION	Establish health promotion unit with staff at HPA and Atol level facilities to collaboration with CSOs. Role clarity on the role of island councils on health promotion and health protection with clear ToR; provide training; rural retention incentives.
COMMUNITY BASED ACTIVITY	Allocation of budget for community based education, screening session; facilitate and motivation of CBOs.
CSO AND ENGAGEMENT	Invest in health promotion fund to support CSO health activities; invest in contractual arrangement with CSOs – regulations, guidelines; Awareness, CBOs, investors, Fund management resources – training; salary; empower CSOs how to tap the fund and also external.
MEDIA ENGAGEMENT	Investing in developing health issue based documentaries, serials, news; training of journalists/reporters.
STAKEHOLDER ENGAGEMENT	Meetings local councils, WDCs. School health- sessions, screenings.
DIGITAL TECHNOLOGIES FOR HEALTH	
DIGITAL FRAMEWORK	Invest to implement digital health framework with regulations and standards; training on these areas locally including provision of health economics and digital health professional courses at University level in Maldives. For longer term school level STEM education to attract more Maldivians to this field
DIGITAL NETWORK	Connect all health facilities with one network as per digital heath architecture blueprint; develop APIs to link different databases and portals such as SIDAS, GEMEN, DHIS2 and social protection databases.

COST CATEGORIES	GAPS
DIGITAL MATERIALS	Devices for online consultations, image/medical records transfer; platform for diagnostics and test/screening results available to health professionals to view within a certain period to reduce duplication of tests, burden on patient and aasandha, reduce waiting lists.
DIGITIZE PERSONAL HEALTH	Expand myhealth portal and make it user firendly. Patient portals now at individual hospitals – can have an integrated portal. Include private facilities – should have person focus.
HEALTH INFORMATION SYSTEMS AND RESEARCH	
DHIS2	Health system performance framework; rollout DHIS2; include all data for PHC essential service package monitoring indicators (KPIs and outcome); invest in adding more programme modules – partially public health programmes (immunization, RMNCAH, mental health, NCDs and CDs, health promotion, environmental health, patient safety). Integrate all government facilities and also private – phased. Training for DHIS data management; digital security and data analysis.
ONE HEALTH SURVEILLANCE	Invest in software for integrated disease surveillance systems-option to include in DHIS2, invest to interphase with animal health and community reporting of communicable diseases.
MEDICAL RECORDS	E.g. invest for digitized medical record and integrate one system in all government health facilities – also to interphase with private facilities – generate KPIs on this as well. Develop unique Health and social protection number.
DIGITAL INTERPHASE	Invest in interfacing all healthcare providers and also with social protection benefit databases.
RESEARCH	Train staff at health facilities to undertake operational research and capacity of HPA to undertake epidemiological research. Collaborate with academic institutions to undertake research needed to gather evidence on the effectiveness of the reforms.
CAPITAL + MEDICAL DEVICE/MEDICINES	
INFRASTRUCTURE	Need to change layout of the health centres to facilitate integrated team based service delivery as required for PHC model; build new dhamanaveshi in large population areas (at present only Male'). Other tertiary hospitals to have PHUs and PHC based integrated delivery – policy decision needed on this. Some infrastructure change is also needed to have infectious pathways, team based service delivery, emergency.
EQUIPMENT & DEVICES IPC (INCLUDING WASH); CONSUMABLES AND LAB DIAGNOSTICS	Procure more point of care devices like glucometers/cardiocheck, pulse oximeter, paediatric cuffs, new born incubators; for sputum examination, transport media, autoclaves for sterilising, autoclaves for waste management; minimum equipment list developed for each facility- need to review against the minimum service package.
ESSENTIAL MEDICINES	Vaccines, HIV/TB medicines, emergency medicines, [essential medicine list available – cost using the list].
COMMUNICATION MATERIALS	e.g. devices for communication and information systems computers, cameras, servers, software.

BOTTLENECKS

To identify possible causes of low quality coverage, the determinants of coverage and the gaps between them (e.g. between supply and demand, and between demand and quality): availability of commodities, availability of skilled human resources, geographic access, utilization (initial and continuous) and quality were assessed[67]. Since the data to conduct a quantitative assessment were not available, a qualitative assessment was made on the supply side and numeric values assigned for the qualitative descriptions (Adequate: = >80%; Moderate: 60-79%; Low: <50%). The demand side assessment was based on review of available reports and studies. As such programme evaluation reports and Maldives demographic health survey 2016-17 was used[68].

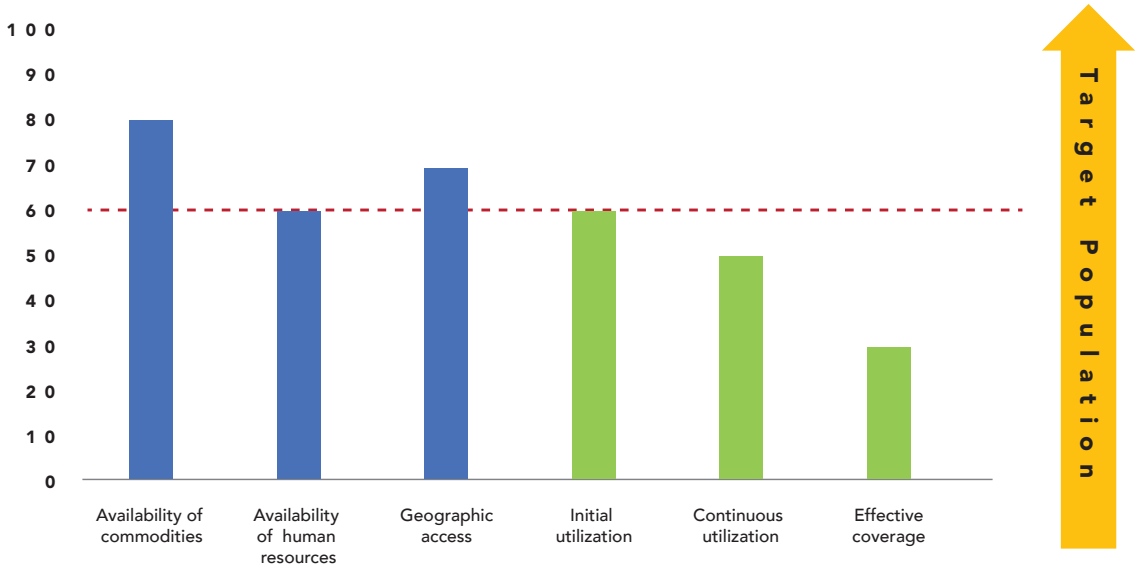


FIGURE 14: BOTTLENECKS IN DETERMINANTS OF QUALITY COVERAGE
BLUE= SUPPLY ASPECTS; GREEN = DEMAND ASPECTS

The main bottleneck for implementing the proposed reform is human resources for PHC, particularly for community health. The bottlenecks relate to inconsistent understanding of PHC among policy makers, managers and health care providers, excessive bureaucratic red tape that acts as a roadblock pave way for a culture that normalizes reactiveness and no planning, and inconsistencies in resource allocation despite the evidence on areas in need. This is particularly evident in financing for retention of community health workers for community engagement in PHC based health service delivery.

[67] UNICEF (2021). MoRES Toolkit

[68] Among the most recent live births in the 2 years before the survey, 59% of mothers said they were informed about danger signs in newborns, while 49% received counselling on child feeding practices.
In the Maldives, more than 7 in 10 women (72%) report having at least one of the specified problems in accessing health care. Among these problems, difficulty in getting an appointment was the leading issue (52%), followed by not having a female health provider (47%). About 3 in 10 women each cited problems with the distance to a health facility (31%), not wanting to go alone (30%), and having no one to look after the children (30%). Getting money for treatment (20%) and getting permission to go for treatment (11%) were less commonly mentioned as problems

Table 6: Bottlenecks in creating an enabling environment

ENABLING ENVIRONMENT	BOTTLENECKS
HEALTH POLICIES	**Inconsistent policies:** While the PHC reform is being discussed, there is an ongoing policy towards separating tertiary hospitals from the service delivery by MoH, but as independent public institutions. This has raised concerns about how to ensure PHC based service delivery at these tertiary hospitals, as envisioned in the PHC reform. At the time of this assessment, it is unclear the modality of providing PHC based services for the population in islands with tertiary health facilities. **Human resources:** While PHC reform is high on the agenda, there is not clear decision and direction on investing in human resources for PHC delivery, particularly for community health both in urban areas and in very small islands. A rural retention policy drafted has not received financial endorsement. **Tertiary hospitals vs PHC:** In the national recovery, two projects, tertiary hospitals in the Atolls and Reviving PHC were prioritized. While the tertiary hospital project is accelerated, PHC project has not progressed adequately and its implementation is at risk.
MANAGEMENT /COORDINATION	**Varying understanding of PHC pillars:** The assessment for PHC package of services indicated that the personnel responsible for the management of the public healthcare facilities have varying understanding of the PHC and the pillars of community engagement and intersectoral action are not seen as PHC, but focuses on health services only. **Unclear roles of health team re PHC:** There is poor coordination among the health care team in the health facility and the public health and community-based functions are seen as the role only of the community health worker. In addition, a number of staff with PHC competencies are placed in administration roles that limit their utility in delivery PHC based services. **Incentives for PHC workers:** The renumeration policies for community health workers are one of the lowest among the health professional cadres, without any incentives for work in the periphery. This has substantially reduced the community health workforce in the health system.
BUDGET/EXPENDITURE	**Disproportionate allocation:** The health budget allocation has a number of mismatches. Despite high government spending on health, the proportion allocated for public health services continue to be low. The 2020 budget submitted to the parliament has not shown major changes in allocation. Budget allocation for primary and secondary prevention at population level for the NCDs, and healthy aging and risk reduction done will be key to UHC for PHC Further there is little allocation for incentivizing community health workforce in the peripheral islands with policy interventions such as rural retention allowances and regular skills update.

ENABLING ENVIRONMENT	BOTTLENECKS
SOCIETAL NORMS AND EXPECTATIONS	**Demand for medical specialist services:** There is a continuous narrative on the need for increased medical specialty services in the Atolls and even in primary care centres. For example, the number of machinery in Maldives opposed to the health professionals operating them is weighted more towards the machinery. There is a need to build HR at community level, instead of investing in these material components. **Outreach services:** While the community demands medical services, the efforts towards providing outreach services are not prioritising. Rather the focus in on establishing medical specialty services in small islands that cannot be sustained, resulting in low quality coverage. **Home visits:** With the increase in life expectancy and longer survival of persons with disabilities there is increasing demand for specialty services. This also requires investment in community health workers which has not received attention in resource allocation.

KEY REFORMS

The consultations held with MoH and the national consultation including other key stakeholders in December 2021 identified key health reforms to build a resilient and equitable PHC based health service delivery that can improve the UHC for the most vulnerable populations and sustain the gains, during crises such as the current pandemic. Further consultations with the Technical and Steering committee at MoH helped to refine the initial list of technical interventions and health system strengthening interventions and gain consensus for the following reforms.

1. Implement team-based approach to delivery at all government health facilities.
The PHC reforms proposed an integrated team-based approach to delivery for the PHC package of essential services at all delivery levels (health centres and hospitals). The reforms proposed were that the PHC teams working in the island will comprise of a total of 4 members for each island (except in L1 & 2 health centres which will have 2-3 members);

- Community Health Worker (CHW) as the PHC team lead, coordinating within the team and other sectors,
- CHWs or nurses, focussing on community-based interventions on RMNCAH and nutrition
- CHWs or nurses, focussing on community-based interventions on mental health and disability therapy support including the care for elderly.
- Medical doctor for providing clinical care and screening interventions at health facility and outreach at school or in the community

All team members are proposed to have shared responsibility of public awareness and life skills development of the people of the island on their focused area of work.

To enable effective implementation, PHC team except the doctor is proposed to be locals. It is proposed to revise the job descriptions for greater role clarity of team members and performance monitoring. The number of teams per health facility is planned to be based on the resident population of the island, proportional to the population.

2. Fill the staff gap in PHC team and upskill PHC team members.
To enable implementation of the PHC team at island levels, the reforms proposed are to;

a. Re-allocate technical staff within the health system's administration and managerial roles to PHC team to fill the gaps in PHC team at all levels of health delivery.

b. Provide in-service training to existing staff, particularly community health workers and nurses on delivering the PHC packages for programme areas.

c. Reform pay structure of community health workers and nurses to apply across sectors and implement rural retention incentive policy.

d. Train and recruit local clinical therapists (psychologists, counsellors) to atoll level.

e. Review and adapt pre-service training curricular for nurses and primary healthcare workers.

3. Establish additional urban health centre for in greater Male' area with staff for PHC based health service delivery.
Two new urban health centres (Dhamanaveshi) are proposed as the current centre is unable to supply PHC based services to the demand of the large population resident in the greater Male' area. As such it is proposed to construct new centres and recruit staff for PHC teams proportional to the population.

4. Accelerate digitisation of health information systems digital architecture blueprint
MoH has developed the digital architecture blueprint and its rollout is identified as a priority for increasing efficiency of PHC based service delivery and for monitoring coverages and implementation of the proposed reforms.

5. Increase government budget allocation to preventive and early detection interventions of health services.
With the high government expenditure on health, it is opposed to take a dual approach to increase financing of interventions of PHC packages. It is proposed to redirect government budget allocation incrementally to preventive and early detection interventions conducted at community level. At the same time, it is proposed to ensure a targeted proportion of all external funded health sector projects are allocated to community based PHC interventions with civil society engagement.

6. Operational research, supervision, monitoring and evaluation for quality of care planned PHC objectives.
Periodic supervision and monitoring is identified to be essential for effective implementation and achievement of targets. As such it is proposed to conduct regular supervision, and monitoring both physically and use of digitized information system to track progress on PHC based service delivery. It is proposed to conduct operational research to learn lessons and generate evidence on success of the reforms.

7. Establish multi-sectoral coordination mechanism for health promotion and early detection.
Multi-sectoral action is one of the pillars of PHC and it is proposed that there needs to be a more robust mechanism to collaborate and coordinate. For this it is proposed to work closely with;

a. School health: Particularly to revive health promoting school initiative and increase school's capacity, including skills of school health officers and counsellors, for creating healthy physical and special environments, empowering school community with life skills, healthy nutrition and practices appropriate to age and gender, health screening, symptomatic treatment and first aid, and psychosocial first aid.

b. IBAMA: the intersectoral community social group at island level that comprise of health, education, social services, youth and island council is a core group for collaboration for community-based interventions of PHC packages. It is proposed the PHC team lead be actively involved in greater engagement of IBAMA members to improve health of the island population, particularly in teaching vulnerable and hard-to-reach population groups (including PWDs, migrants and those living alone without family support).

8. Establish sustainable mechanisms and platform for engagement with civil society organizations and private sector.

It is recognized that the capacity of the government health sector is limited and there is opportunity to establish partnerships with civil society organizations, particularly those Non-Governmental Organizations (NGOs) working on specific health issues and private health care sector. As NGOs have a greater opportunity to reach to the population in need and vulnerable populations, it is proposed to establish medium-long term projects with health NGOs and private sector for selected interventions of PHC packages.

PLAN FOR IMPLEMENTATION OF PHC INVESTMENTS

The target year for the SDGs being 2030, the PHC implementation is planned to accelerate progress towards to Agenda 2030 of leaving no one behind, particularly for the UHC target. As such the interventions are planned for the period 2023 to 2030.

The Ministry of Health is taking the lead to steer the implementation of the PHC priority interventions through inclusion in the government budget and donor supported projects and periodic supervision and monitoring of implementation status. An implementation plan for health system and programme management interventions is developed with a monitoring framework to guide next steps and monitor progress(see annexure).

PHC COSTING FOR UHC

The PHC costing draws on the conceptual framework used in the Global Investment Framework for Women's and Children's Health.[69] The framework is anchored to recognizing socio-economic determinants, enablers such as policy and health system inputs and core interventions in producing health outcomes. However, as the focus of this exercise is on cost estimates and health impact, only part of the approach is applied. As the health facilities at all levels, except the national referral hospital, are structured to provide community-based health services, the PHC interventions

[69] Stenberg, K., Axelson, H., Sheehan, P., Anderson, I., Gülmezoglu, A. M., Temmerman, M., ... & Bustreo, F. (2014). Advancing social and economic development by investing in women's and children's health: a new Global Investment Framework. The Lancet, 383(9925), 1333-1354.

costed in this exercise lies across the health service delivery levels from primary to tertiary level. For determining the interventions by delivery level, health centers at grades 1 and 2 were categorized as community level, health centers at grade 3 and 4 as well as urban health center were graded at clinical level, and all levels of hospitals as hospital level.

One Health Tool (OHT) was the main costing tool used in the exercise. In addition to OHT Microsoft Excel too was used for further calculations and by extracting cost and health impact outputs from OHT and calculating investment returns. The OHT was developed by UN Inter-Agency Working Group on Costing (IAWG-Costing) in association with WHO and encompasses a large range of demographic, epidemiological and health system details. The tool is regularly updated from newly released data (for Maldives DHS 2016-17 is employed as default) and epidemiological and assessment studies. The default demographic data comes from DemProg data derived from UN population projection numbers. The OHT has been employed in past studies by Stenberg et al., (2014)[19] and Adesina & Bollinger (2013)[70] for maternal and child health, Sheehan et al (2017)[71] and Sweeny et al (2019)[72] for adolescent health, Betram et al. (2018)[73] for non-communicable diseases, and Cantelmo et al., (2018) and Wong (2018) for overall health strategy. In addition to default settings and information, the OHT allows for customising the data for prevalence and incidence of diseases, treatment coverage, risk factors, target population, demographic characteristics and unit costs. Furthermore, the tool allows for deriving PHC costs as a subset and timely technical support was provided. The costing exercise involved 6 steps and are described below.

The National Steering Committee (NSC), Technical committee (TC) for the PHC investment case at MOH were instrumental in the review and validation of the priority PHC interventions, bottlenecks, cost categories, health system inputs and the interventions. The outputs were discussed with and further validated at national workshops with health sector representatives, key government stakeholders, civil society organizations and representatives from UN Agencies in the Maldives.

STEP 1: IDENTIFICATION OF PRIORITY PHC INTERVENTIONS

Priority interventions for PHC based delivery were identified through a participatory approach with input from the field on the current interventions being delivered in comparison to those planned by policy and felt need from the health care providers in the islands and in the urban health center in the Male' area. The findings were triangulated with current situation of burden of disease, population structure, health spending and where available, projections to the future, particularly 2030.

STEP 2: ANALYSIS OF BOTTLENECKS

The bottleneck analysis focused on the assessment of determinants of coverage, quality and the gaps between them: availability of commodities, availability of skilled human resources, geographic access, utilization (initial and continuous) and quality[74]. Since the data to conduct a quantitative assessment were not available, a qualitative assessment was made on the supply side and numeric values assigned for the qualitative descriptions (Adequate: = >80%; Moderate: 60-79%; Low: <50%). The member of NSC and TC members and key informants at programme level and service delivery level provided input for the analysis. The demand side assessment was based on review of programme evaluation reports and Maldives demographic health survey 2016-17 and other studies and estimates were used and validated with NSC and TC members.

STEP 3: IDENTIFICATION OF HEALTH SYSTEM REFORMS TO ADDRESS KEY BOTTLENECKS

Health systems reforms and interventions and health systems blocks needed to address the bottlenecks were discussed with staff at different service delivery levels, national programme managers and key staff at MoH. These were then reviewed against the ongoing or planned interventions in the SAP, national recovery plan and programme level strategic action plans and policy initiatives. Priority health system interventions were identified for costing with the NSC and TC.

STEP 4: ESTIMATION OF PHC INTERVENTION COVERAGES

Once the technical, policy and programme, health system interventions were identified, baselines were established through a review of published studies, national statistics, estimates from international institutions, programme records and expert opinion and consensus. Targets were identified through a review of existing

[70] Adesina, A., & Bollinger, L. A. (2013). Estimating the cost-savings associated with bundling maternal and child health interventions: a proposed methodology. BMC Public Health, 13(3), 1-7.
[71] Sheehan, P., Sweeny, K., Rasmussen, B., Wils, A., Friedman, H. S., Mahon, J., ... & Laski, L. (2017). Building the foundations for sustainable development: a case for global investment in the capabilities of adolescents. The Lancet, 390(10104), 1792-1806.
[72] Sweeny, K., Friedman, H. S., Sheehan, P., Fridman, M., & Shi, H. (2019). A health system–based investment case for adolescent health. Journal of Adolescent Health, 65(1), S8-S15.
[73] Nugent, R., Bertram, M. Y., Jan, S., Niessen, L. W., Sassi, F., Jamison, D. T., ... & Beaglehole, R. (2018). Investing in non-communicable disease prevention and management to advance the Sustainable Development Goals. The Lancet, 391(10134), 2029-2035.
[74] UNICEF (2021). MoRES Toolkit

national plans, discussions with national programme managers and service delivery level staff and refined with inputs from NSC and TC members.

Establishing baselines and targets required identification of target population in need for each intervention. Population with age group cut-offs relevant to each intervention was determined and OHT default population of UN population projection for Maldives were applied. The coverage at each delivery level was determined with the proportion of population at each delivery level.

For the intervention scale-up scenario, a progressive increase in intervention coverage up to 2030 was assumed. When baseline was set at 85% or more, target coverage for the scale-up scenario took a rate of 100% in OHT. For newer interventions the target varied from 30 to 50% based on the population in need and policy priority for meeting the SDG goals (especially SDG3) or national targets. For each intervention, data for coverage and demographic characteristics were updated in OHT. The coverage rates between 2023 and 2030 were interpolated using the linear interpolation for technical interventions and S-shaped interpolation for health system interventions. The baseline scenario assumes that estimated treatment coverage would remain the same (business-as-usual) at the end of the intervention period (2023 and 2030).

STEP 5: ESTIMATION OF COSTS OF PHC INTERVENTIONS

To estimate unit and total costs of interventions, cost components are divided into three items: Intervention cost, Policy and Program cost, and Health System cost. Intervention costs relates to cost of increasing the intervention coverage above existing coverage levels or introducing new interventions. This included cost of drugs and supplies for the interventions and frequency of contact with health service staff. Policy and Program costs measured the cost incurred specific to the programs related to the interventions by the government and included interventions form standards, taxation, enforcement as well as interventions to create public awareness and quality assurance of interventions. Health system costs estimated the cost of activities to strengthen the health system to ensure increased coverage and delivery of the healthcare including human resources, information technology and information systems as well as infrastructure costs for urban PHC and equipment upgrades to enable digital technology use in community-based interventions. As such, both recurrent and capital costs were included in the cost estimates.

Cost estimates for relevant populations were considered with suitable fragmentation of cost-components for using available data of prevalence of disease conditions in relevant age groups. Cost estimates by service delivery levels were developed by applying percentage population covered by the level of service delivery for each intervention. Cost estimates for respective intervention were developed by use of projected values of increased intervention coverages compared to baseline no scale up. Once the intervention targets are determined, OHT employed these models to estimate the need for health services inter-temporally, by taking into consideration demographic growth, reduced deaths and reduced incidence or prevalence of disease conditions, as policy and program interventions would be scaled-up.

STEP 6: ESTIMATION OF IMPACTS OF PHC PACKAGES

The unique integrated nature of OHT, allowed assessment health gains while incorporating interlinked epidemiological models including LiST (Lives Saved Tool), Mortality averted and Healthy Years of Life Lived (HYLL). Once interventions were identified, existing coverage of interventions and target population are specified for each intervention, the impact of the interventions was captured in the model through by changing treatment coverage rates in the OHT, the impact of interventions were generated.

For the investment returns, an Excel tool was used and scoped only for NCD and mental health intervention packages. Economic information for Maldives obtained from Maldives Bureau of Statistics were applied together with scientific literature on the impact of specific NCD conditions on labour force participation, absenteeism and presenteeism.[75,76,77,78]

COST ILLUSTRATIONS

The PHC packages (Table 4) are in the programme areas of RMNCAH, immunization, nutrition, TB/HIV, neglected tropical diseases (NTDs), NCDs and mental health are costed for interventions and programme costs. The cost

[75] Barnay, T., & Debrand, T. (2006). Effects of health on the labour force participation of older persons in Europe. Health Econ Letters, 109.
[76] Hanly PA, Sharp L. (2014). The cost of lost productivity due to premature cancer-related mortality: an economic measure of the cancer burden. BMC cancer, 14(1):1-0.
[77] Schofield DJ, Shrestha RN, Percival R, Passey ME, Callander EJ, Kelly SJ. (2011). The personal and national costs of mental health conditions: impacts on income, taxes, government support payments due to lost labour force participation. BMC psychiatry, 11(1):1-7.
[78] Baushy & Glynn SJ (2012). There are significant business costs to replacing employees. https://www.americanprogress.org/article/there-are-significant-business-costs-to-replacing-employees/

distributions by health service delivery levels are produced using share of population coverages at each level. Health system costs that cut across PHC packages are produced by health system building blocks and further disaggregated by share of PHC delivery costs. The costs are produced for a period of eight years from 2023 to 2030.

COSTING BY INTERVENTION PACKAGES

The cost of PHC intervention packages (intervention cost and programme costs) is estimated at MVR1,535,544,471 (USD99,581,354) accounting for 20% of total investment of PHC. NCD package takes up 45% of the cost of PHC interventions (MVR697,145,975), consistent with the high burden of risk factors and CVDs, diabetes and cancers that need screening for early detection and policy interventions for the control of tobacco, salt and sugar in food sources available to the population. Figure 15 presents the intervention cost distribution by package.

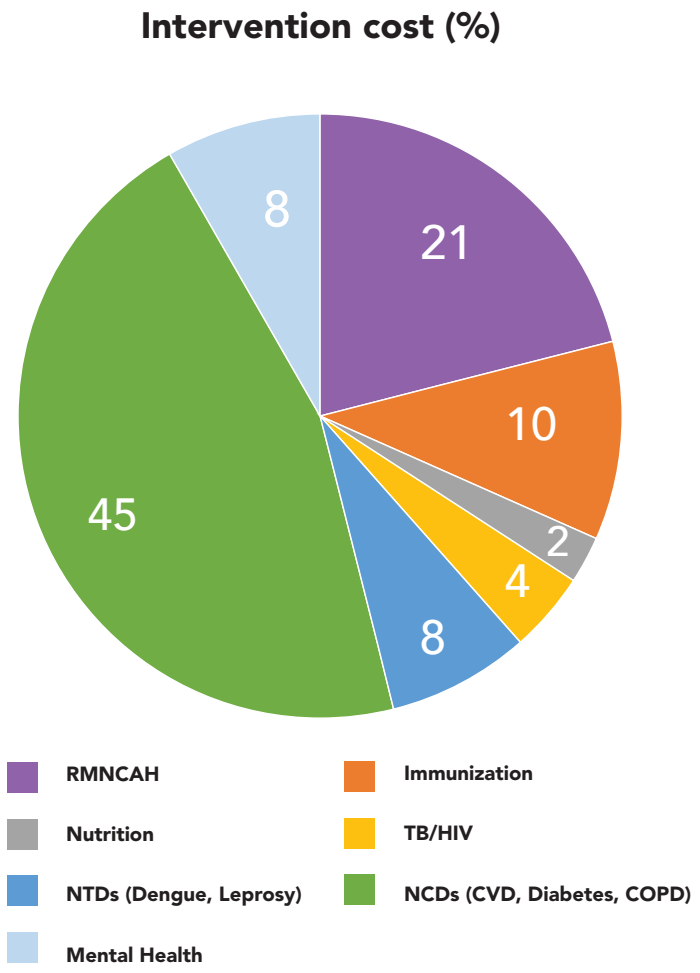


Figure 15: Distribution of PHC intervention cost by package

RMNCAH and immunization takes up 31% of cost to sustain the current high coverage of interventions and additional interventions for adolescent health (MVR324,183,118 for RMNCAH and MVR160,476,871 for immunization) while nutrition interventions take up 2% (MVR37,522,643) with coverage across population groups. Mental health accounts for 8% (MVR127,388,658) of intervention costs, and Neglected Tropical Diseases (NTDs) focussing on dengue and leprosy also take up 8% of costs (MVR 122,441,413) with intervention at environmental level and epidemiological investigations for zero leprosy. TB/HIV takes 4% of the cost, given the efforts focussed on early detection and testing among high-risk groups, moving towards elimination of TB and reaching high risk groups. The cost estimates by package area for the period 2023-2030 is presented in the Table 7. Annual cost by package is presented in the appendix.

Table 7: Total PHC packages interventions costs for the period 2023-2030

PHC PACKAGE	INTERVENTIONS MVR	TOTAL PACKAGE MVR	TOTAL PACKAGE USD
RMNCAH	232,145,686	324,183,118	21,023,548
IMMUNIZATION	160,476,871	160,476,871	10,407,060
NUTRITION	28,505,946	37,522,643	2,433,375
TB/HIV	37,320,661	66,385,795	4,305,175
NTDS (DENGUE, LEPROSY)	56,622,812	122,441,413	7,940,429
NCDS (CVD, DIABETES, COPD, CANCER)	571,393,407	697,145,975	45,210,504
MENTAL HEALTH	92,214,389	127,388,658	8,261,262
TOTAL PACKAGES	**1,178,679,772**	**1,535,544,471**	**99,581,354**

COSTING BY DELIVERY LEVEL

The cost distribution estimated on population coverage by level of healthcare delivered by the facility[79]. Figure 16 presents the cost distribution by service delivery level. The interventions from health centres level 3,4 and urban health centres takes up 46% of the cost (MVR2,939,302,434). This results from the classification of the large target population for PHC interventions resident in the grater Male' area.

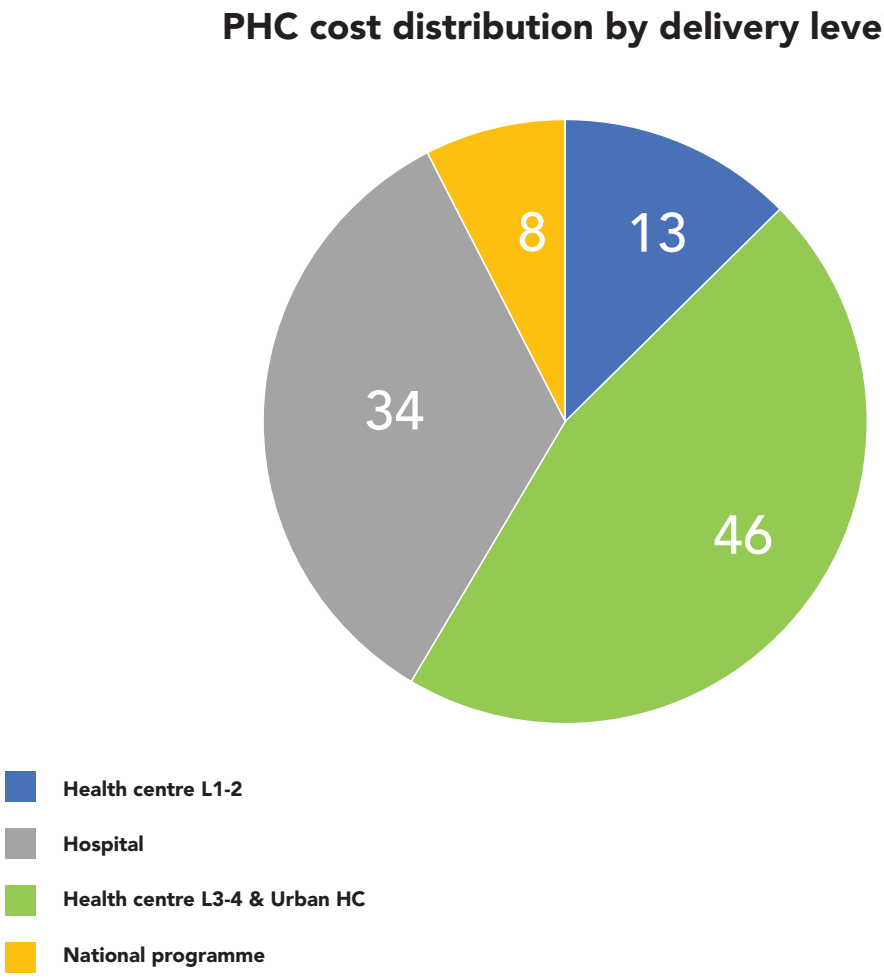


Figure 16: Distribution of PHC intervention by service delivery level

[79] In the context of Maldives due to the dispersed nature of the islands, the health system is structured to provide primary care also form the hospital where there is a hospital on the island. Hence, in the Maldives PHC interventions proposed cut across all levels of service delivery.

The hospitals accounts for 34% of the PHC cost (MVR 2,135,529,873) as by design, the government hospitals have a Public Health Unit integrated into its services and cater to a larger population in comparison to the smaller health centers. Health centers level 1 and 2 accounts for 13% of the cost (MVR 798,431,965) consistent with the smaller population served and 8% of costs are at national programme level (MVR472,692,577). Unattributable to a service delivery level MVR 1,230,432,128, costs that relates to policy on health system. Annual cost by delivery level is provided in the appendix.

COSTING BY HEALTH SYSTEM BLOCKS

The estimate of total health system investments for delivering packages and policy interventions for the period 2023-2030 is MVR 6,040,844,506 (USD391,753,859), with MVR 1,401,217,668.47 (USD 90870147) for delivery of the PHC package interventions, translating to 23% of health system costs.

The cost by health system building blocks is presented in Table 8 and distribution in Figure 17. The largest share of health system for PHC is in human resources with 75% of cost (MVR4,521,112,045), that includes investments of in-service trainings for the proposed PHC team (nurses and CHWs) at island levels on PHC package delivery components and recruitment of additional CHWs for island level and psychosocial therapists at atoll level. Logistics account for 21% of cost (MVR1,291,004,487) Health information system costs including digital networks and data systems takes up 2% (MVR 91,260,929) and infrastructure cost accounts for another 2% (MVR137,467,045) including capital and operating cost of infrastructure.

Table 8: Total health system costs for PHC 2023-2030

HEALTH SYSTEM BUILDING BLOCKS	PHC PROVISION MVR	TOTAL HEALTH SYSTEM MVR	TOTAL HEALTH SYSTEM USD
HUMAN RESOURCES	1,213,229,170	4,521,112,045	293,197,928
INFRASTRUCTURE	108,181,436	137,467,045	8,914,854
LOGISTICS	55,674,761	1,291,004,487	83,722,729
HEALTH INFORMATION SYSTEMS	24,132,301	91,260,929	5,918,348
TOTAL	**1,401,217,668**	**6,040,844,506**	**391,753,859**

The system cost for PHC delivery as share of each health system building block is examined at block level is presented in figure 18. PHC costs of the infrastructure block takes up 79% of cost driven by the investment for establishment of two urban health centers in the greater Male' area, followed by investments for PHC delivery in human resources with 27% and health information systems with 26%. The share of logistics cost for PHC delivery is 4%.

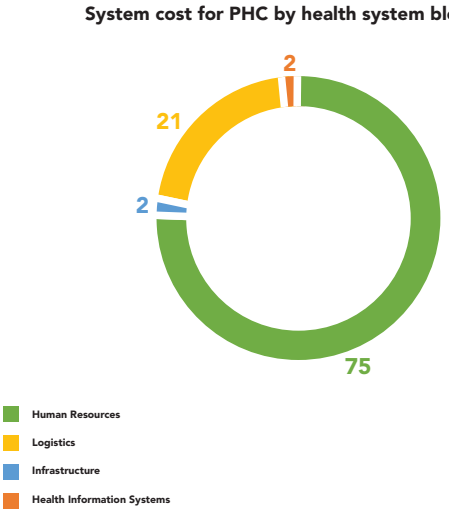


Figure 17: Health system costs by building blocks.

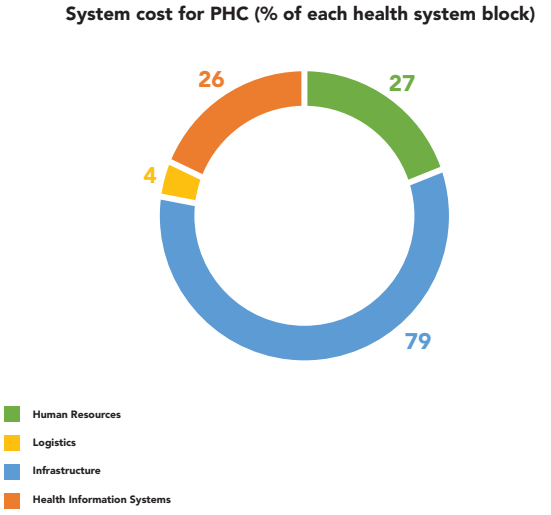


Figure 18: Share of health system blocks cost for PHC

The total annual increment cost estimated in MVR276,788,011 (USD17,949,936). The breakdown of this cost (Figure 19) estimates incremental cost of MVR183,263,276 (USD11,884,778) in human resources for delivery of PHC intervention packages, MVR 51,590,812 (USD 3,345,708) for logistics and supplies, MVR 9,387,885 (USD 608,812) for health information systems. Incremental infrastructure cost is estimated only in the first year with MVR13,648,322 (USD885,105) for establishing two urban health centers in greater Male' area. The large share occupied human resource is driven by the small populations on dispersed islands due to the geography of the country coupled with the policy to have medical doctors at island level in addition to the PHC workers and nurses, irrespective of the size of the resident population.

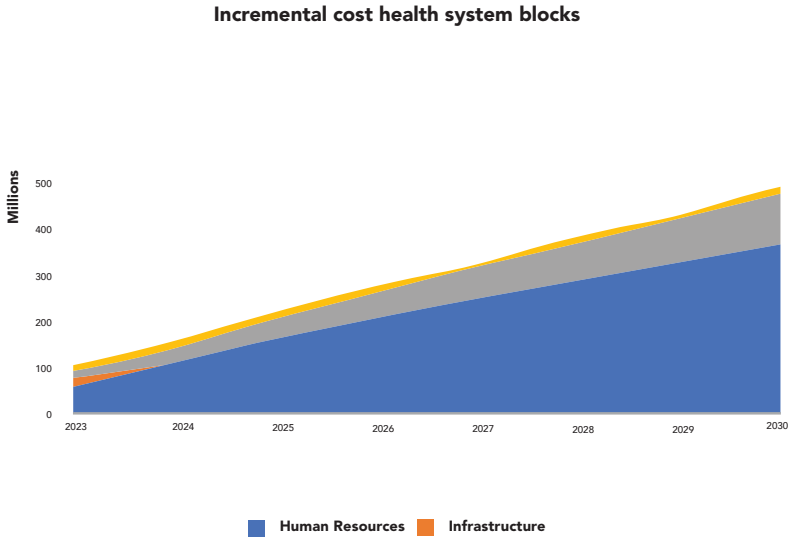


FIGURE 19: INCREMENTAL COSTS BY HEALTH SYSTEM BLOCKS FOR THE DELIVERY OF PHC INTERVENTIONS

TOTAL PHC COST AND RESOURCE GAP ANALYSIS

The PHC packages costs for the eight-year period estimated is MVR 2,936,762,139 (USD 190,451,501), amounting to 20% of the total cost (Table 9). This translates to PHC interventions cost per capita expenditure of MVR305 (USD20).

The total investment cost over the eight years for PHC, including the health system interventions for the delivery of PHC interventions estimated is MVR 7,576,388,977 (USD 491,335,213). The average per capita PHC investment required over 2023-2030 is MVR1506 (USD98) ranging from MVR1222 (USD79) to MVR1744 (USD113) during scale up of PHC interventions.

TABLE 9: TOTAL HEALTH SYSTEM COSTS FOR PHC 2023-2030

	MVR	USD
PHC INTERVENTION PACKAGES COST	1,535,544,471	99,581,354
PHC PACKAGES AND DELIVERY COST	2,936,762,139	190,451,501
TOTAL PHC INVESTMENTS (WITH HEALTH SYSTEM BLOCKS COST)	7,576,388,977	491,335,213
PER CAPITA PHC INTERVENTION PACKAGES COST	305	20
PER CAPITA PHC PACKAGES AND DELIVERY COST	584	38
PER CAPITA TOTAL PHC COST	1,506	98

The government budget for health was MVR5225 million in 2020[80] translating to a government per capita expenditure of MVR9374 (USD608). However, NHA estimates 2018-2020 show the allocation for preventive health interventions is less than 1%. The PHC cost estimates indicates the need to increase allocation to 20%, adequate to cover the PHC interventions costs that are mostly preventive health interventions.

The total PHC investment including health system cost indicated the need to invest MVR1506 per capita (USD98 per capita). The government may consider redirecting allocation of healthcare finances from high-cost curative interventions to PHC interventions within the current allocations or provide additional allocation to current levels of government spending, thereby increasing government per capita health MVR10,880 (USD706).

RETURNS ON PHC INVESTMENTS

The return on investment is produced for 2023-2030 in terms of health impact for investing in the delivery of the selected PHC interventions on RMNCAH and NCDs including mental health, using the impact modules in the OHT (LisT and NCD impact). Further, productivity impact and costs saved are produces for NCD packages.

HEALTH IMPACTS

The health impact of investing in the delivery of the selected PHC interventions on maternal, new-born and child health over 2023-2030 show a small impact driven by the current high coverage of interventions in this package

[80] National Health Accounts 2018-2020 draft on production

(see Figure 10). However, significant is the observation of 4 neonatal lives saved from the investments from 2026 onwards, which is at the present the main driver of infant mortality in the country.

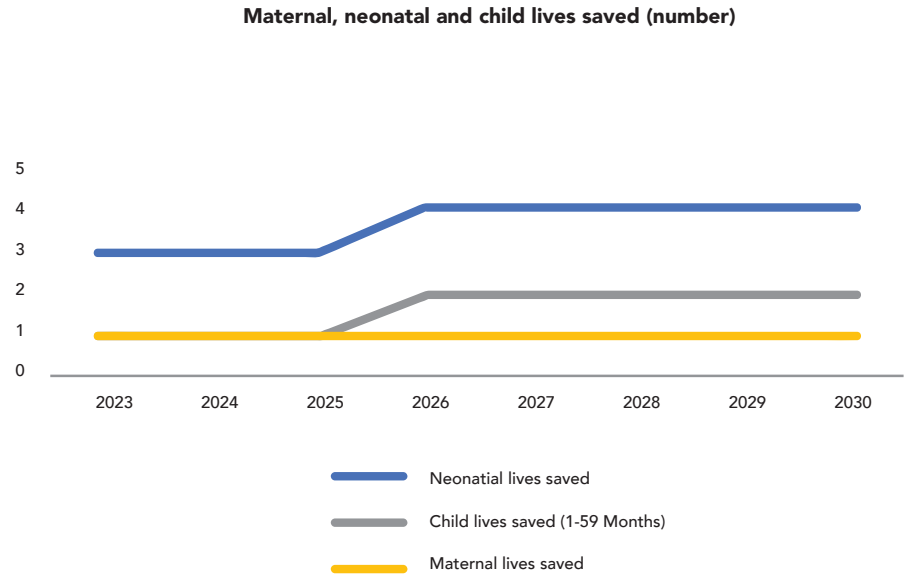


Figure 20: Maternal, new-born and child lives saved 2023-2030 from PHC interventions

The health impact of investing in the delivery of the selected PHC interventions on NCDs is produced in terms of lives saved (death prevented) and healthy years of life (HYL) gained (disability prevented) in the target population (40 years and over) over the period 2023-2030 (see Table 10).

Table 10: Health impact from PHC interventions for NCD control, 2023-2030

INTERVENTION PACKAGE	HEALTHY LIFE YEARS GAINED	LIVES SAVED
RISK REDUCTION: TOBACCO, SALT, SSB, PHYSICAL ACTIVITY	355	-
CARDIOVASCULAR DISEASE	821	116
DIABETES	222	12
COPD/ASTHMA	1897	53
CANCERS	4151	56
MENTAL HEALTH	2620	7
TOTAL	**10066**	**244**

Over the eight years, the interventions are estimated to gain 10,066 years of healthy years of life and save 244 lives in the target population with the PHC interventions. Figure 21 presents annual HYL gained as the PHC interventions of NCD package is scaled up and Figure 22 present lives saved from these interventions. The largest share of HYL is observed in cancers followed by cardiovascular diseases, While the lives saved from NCDs shows a steady increase, lives saved from cancers increases steeply after 2026, four years of sustained interventions scale up.

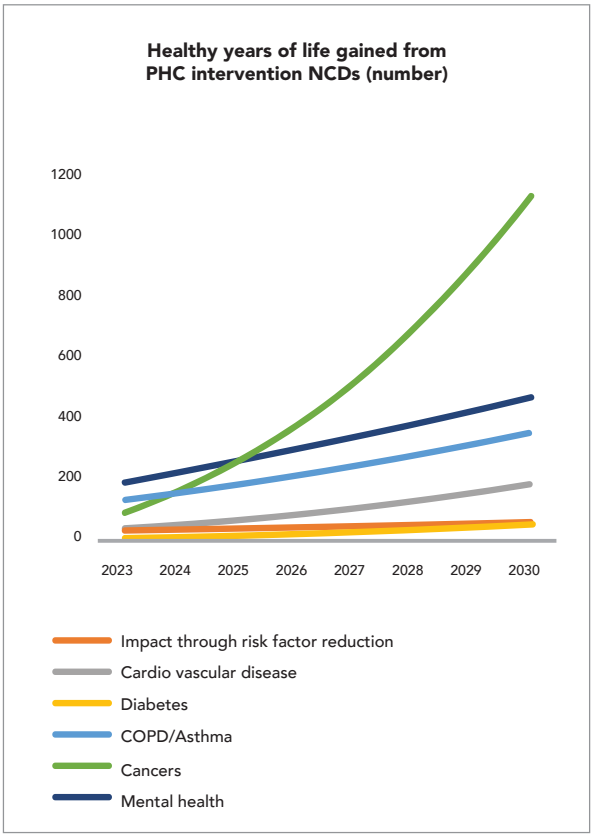


FIGURE 21: HEALTHY YEARS OF LIFE GAINED FOR NCDS

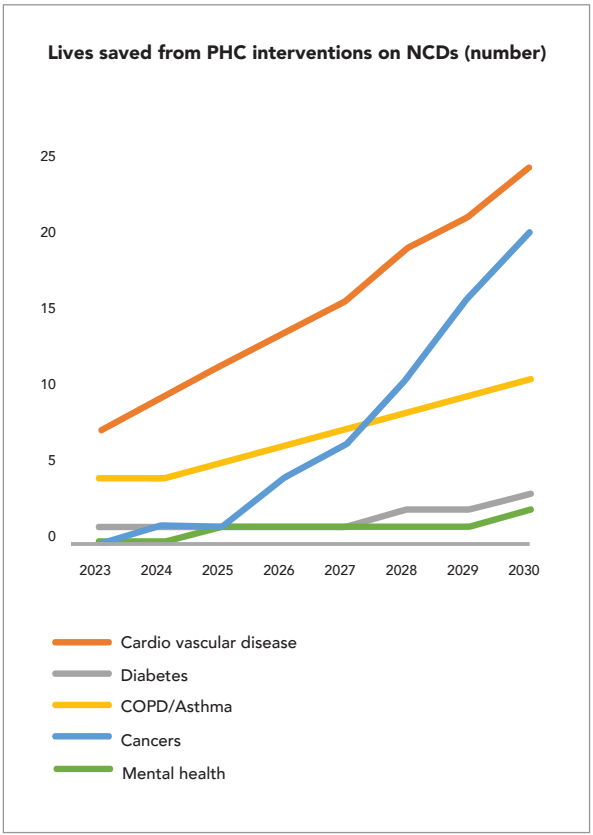


FIGURE 22: LIVES SAVED FROM NCD BURDEN

PRODUCTIVITY IMPACTS

Productivity impacts are produced using economic information such as the Gross Domestic Product (GDP), total labour force, labour force participation, and the health impacts on labour force participation, presenteeism and absenteeism. Table 16 shows the productivity value gained with the healthy years of life gained and deaths prevented. The largest productivity gain is estimated from PHC interventions on mental health followed by those on cancer.

TABLE 11: IMPACT ON LABOUR FORCE PRODUCTIVITY FROM HEALTH IMPACTS

INTERVENTION PACKAGE	VALUE OF PRESENTEEISM	VALUE OF AVOIDED ABSENTEEISM	VALUE OF AVOIDED MORTALITY
RISK FACTOR REDUCTION		3.4	
CARDIOVASCULAR DISEASE	5	8	59
DIABETES	1	0	6
COPD/ASTHMA	3	48	27
CANCERS	72	287	27
MENTAL HEALTH	693	838	4
TOTAL	**774**	**1185**	**122**

FINANCIAL GAIN

The financial gain from the PHC investments were produced considering the health impact on productivity. Health system cost savings are not included as part of this calculation. Table 7 presents the financial savings form one MVR invested in PHC interventions for NCDs targeted for the conditions.

Table 12: Financial gain from One MVR invested for PHC interventions on NCD

INTERVENTION PACKAGE	MVR SAVED	USD SAVED
RISK FACTOR REDUCTION	6.5	0.4
CARDIOVASCULAR DISEASE	1.0	0.1
DIABETES	0.1	0.0
COPD/ASTHMA	2.6	0.2
CANCERS	3.1	0.2
MENTAL HEALTH	3.0	0.2
TOTAL	**16.4**	**1.1**

The estimates show that for every one MVR invested in the delivery of PHC interventions 16 MVR (one USD) can be gained.

CONCLUSION

Revitalisation of PHC is a priority reflected in the government's Strategic Action Plan and a priority policy initiative in the national resilience and recovery from the COVID-19 pandemic. The PHC investment identified the need for increasing coverage of PHC interventions for the prevention of NCDs, mental health interventions, adolescent health and nutrition while maintaining continued high coverage in RMNCAH, Immunization, TB/HIV, NTDs.

The total investment cost over the eight-year period (2023-2030) for PHC, including the health system cost for the delivery of PHC interventions estimated is MVR 7,576,388,977 (USD 491,335,213). The average per capita for the total PHC investment required over 2023-2030 is MVR1506 (USD98). Sustained investment in the scale up of PHC interventions coverage is estimated to gain over 10,000 healthy years of life in the productive population and over 200 lives saved from 2023 to 2030, with early health impacts starting to be observed in four to five years.

Current government per capita expenditure of MVR9374 (USD608) for the population and 11% GDP is an indication of government commitment to health. However, the national health accounts 2018-2020 shows current government spending on preventive health is grossly inadequate. The PHC cost estimates indicates the need to redirect allocation of health spending for preventive health interventions annually by 2.5% to cover the PHC interventions costs and reach an effective UHC coverage of 80%. This will actually reduce current expenditure of tertiary level care since risk factors especially for NCDs will reduce significantly.

The government may consider redirecting a portion of the current spending on high-end curative care of NCDs to scale up PHC interventions. Moreover, in addition to health impact, with such re-allocation there is productivity gains in the labour force and a cost saving of MVR16 is estimated for 1MVR invested.

ANNEXURES

A. INTERVENTION COVERAGES 2023-2030

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
REPRODUCTIVE, MATERNAL AND NEW-BORN HEALTH									
MODERN CONTRACEPTIVE METHODS	15	17	18	18	19	19	19	20	20
SAFE ABORTION	5	33	36	40	44	48	52	56	60
POST-ABORTION CASE MANAGEMENT	60	80	83	86	89	91	94	97	100
ECTOPIC CASE MANAGEMENT	95	98	98	98	99	99	99	100	100
TETANUS TOXOID (PREGNANT WOMEN)	82	91	92	94	95	96	97	99	100
SYPHILIS DETECTION AND TREATMENT (PREGNANT WOMEN)	100	100	100	100	100	100	100	100	100
BASIC ANC	95	98	98	98	99	99	99	100	100
HYPERTENSIVE DISORDER CASE MANAGEMENT	99	100	100	100	100	100	100	100	100
MANAGEMENT OF PRE-ECLAMPSIA (MAGNESIUM SULPHATE)	95	98	98	98	99	99	99	100	100
UTEROTONICS FOR POSTPARTUM HAEMORRHAGE	95	98	98	98	99	99	99	100	100
LABOUR AND DELIVERY MANAGEMENT	95	98	98	98	99	99	99	100	100
MGSO4 FOR ECLAMPSIA	95	98	98	98	99	99	99	100	100
NEONATAL RESUSCITATION	82	91	92	94	95	96	97	99	100
MANAGEMENT OF OBSTRUCTED LABOUR	98	99	99	99	99	100	100	100	100
KANGAROO MOTHER CARE	75	87	88	90	91	93	95	96	98
ANTIBIOTICS FOR PRETERM OR PROLONGED PROM	71	85	87	90	92	94	96	98	100
INDUCTION OF LABOUR FOR PREGNANCIES LASTING 41+ WEEKS	2	2	2	2	2	2	2	2	1.7
NEWBORN SEPSIS - INJECTABLE ANTIBIOTICS	94	97	98	98	98	99	99	100	100
TREATMENT OF URINARY TRACT INFECTION (UTI)	50	65	67	69	71	74	76	78	80
IDENTIFICATION AND MANAGEMENT OF INFERTILITY	6	13	15	17	19	21	24	26	28
TREATMENT OF SYPHILIS	50	65	67	69	71	74	76	78	80
TREATMENT OF GONORRHOEA	50	65	67	69	71	74	76	78	80
TREATMENT OF CHLAMYDIA	50	65	67	69	71	74	76	78	80
TREATMENT OF TRICHOMONIASIS	50	65	67	69	71	74	76	78	80

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
TREATMENT OF PID (PELVIC INFLAMMATORY DISEASE)	50	65	67	69	71	74	76	78	80
CHILD HEALTH									
GROWTH MONITORING	86	93	94	95	96	97	98	99	100
MONITORING DEVELOPMENT MILESTONES	0	15	17	19	21	24	26	28	30
DEWORMING	86	93	94	95	96	97	98	99	100
ORS	57	79	82	85	88	91	94	97	100
ZINC (DIARRHOEA TREATMENT)	48	74	78	82	85	89	93	96	100
PNEUMONIA TREATMENT (CHILDREN)	84	92	93	94	95	97	98	99	100
ADOLESCENT HEALTH									
VISION SCREENING (SCHOOL BASED)	5	43	48	53	59	64	69	75	80
INJURY CARE DUE TO INTIMATE PARTNER VIOLENCE: PHYSICAL ASSAULT	5	15	17	19	21	24	26	28	30
INJURY CARE DUE TO INTIMATE PARTNER VIOLENCE: SEXUAL ASSAULT	5	15	17	19	21	24	26	28	30
FAMILY PLANNING (CONTRACEPTIVES) FOR THOSE NOT IN UNION OR BELOW 15 YEARS OF AGE	0	15	17	19	21	24	26	28	30
INTEGRATED MANAGEMENT OF COMMON CONDITIONS IN PRIMARY CARE	0	5	6	6	7	8	9	9	10
PRECONCEPTION INTERVENTIONS	0	15	17	19	21	24	26	28	30
NUTRITION									
INTERMITTENT IRON-FOLIC ACID SUPPLEMENTATION (MENSTRUATING WOMEN WHERE ANAEMIA IS PUBLIC HEALTH PROBLEM)	0	15	17	19	21	24	26	28	30
DAILY IRON AND FOLIC ACID SUPPLEMENTATION (PREGNANT WOMEN)	90	100	100	100	100	100	100	100	100
BREASTFEEDING COUNSELLING AND SUPPORT	48	74	78	81	85	89	93	96	100
COMPLEMENTARY FEEDING COUNSELLING AND SUPPORT	48	74	78	81	85	89	93	96	100
MANAGEMENT OF MODERATE ACUTE MALNUTRITION (CHILDREN)	48	74	78	81	85	89	93	96	100
ADVICE AND CARE FOR ADOLESCENTS WITH LOW BMI (SCHOOL BASED)	0	0	7	14	21	29	46	57	70
NUTRITIONAL CARE AND SUPPORT FOR ELDERLY	0	15	17	19	21	24	26	28	30
IMMUNIZATION									
MEASLES VACCINE	89	94	94	95	95	96	97	97	98

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
DPT/PENTAVALENT VACCINATION	99	100	100	100	100	100	100	100	100
HIB VACCINE	99	100	100	100	100	100	100	100	100
HEP B VACCINE TO PREVENT LIVER CANCER	92	96	96	97	98	98	99	99	100
POLIO VACCINE	82	90	91	92	93	95	96	97	98
BCG VACCINE	92	96	96	97	98	98	99	99	100
HPV VACCINE	30	48	54	61	68	75	81	88	95
TB									
DIAGNOSIS WITH MICROSCOPY: PASSIVE TB CASE FINDING, CHILD CASES	80	90	91	93	94	96	97	99	100
DIAGNOSIS WITH CULTURE: PASSIVE TB CASE FINDING, HIV-NEGATIVE ADULTS	80	90	91	93	94	96	97	99	100
DRUGS SUSCEPTIBILITY TESTING FOR FIRST-LINE DRUGS: NEW TB CASES	100	100	100	100	100	100	100	100	100
INITIAL DIAGNOSIS WITH XPERT: PASSIVE TB CASE FINDING, HIV-NEGATIVE ADULTS	50	50	50	50	50	50	50	50	50
INITIAL DIAGNOSIS WITH XPERT: PASSIVE TB CASE FINDING, CHILD CASES	50	50	50	50	50	50	50	50	50
SCREENING WITH X-RAYS: PASSIVE TB CASE FINDING, HIV-POSIIVE ADULTS	80	80	80	80	80	80	80	80	80
DIAGNOSIS WITH X-RAYS: PASSIVE TB CASE FINDING, CHILD CASES	80	80	80	80	80	80	80	80	80
FIRST-LINE TB TREATMENT: INITIAL TREATMENT FOR ADULTS	100	100	100	100	100	100	100	100	100
FIRST-LINE TB TREATMENT: INITIAL TREATMENT FOR CHILDREN	100	100	100	100	100	100	100	100	100
MDR-TB TREATMENT	80	80	80	80	80	80	80	80	80
XDR-TB TREATMENT	30	30	30	30	30	30	30	30	30
ACTIVE CASE FINDING FOR HOUSEHOLDS	80	90	91	93	94	96	97	99	100
ACTIVE CASE FINDING IN HIGH-RISK GROUPS	80	90	91	93	94	96	97	99	100
PRE-TPT EVALUATION OF HOUSEHOLD CONTACTS	0	15	17	19	21	24	26	28	30
PRE-TPT EVALUATION OF HIGH-RISK GROUPS	0	15	17	19	21	24	26	28	30
TESTING FOR LTBI AMONG CHILD HOUSEHOLD CONTACTS	0	15	17	19	21	24	26	28	30
TESTING FOR LTBI AMONG ADULT HOUSEHOLD CONTACTS	0	15	17	19	21	24	26	28	30
TESTING FOR LTBI AMONG CHILDREN IN HIGH-RISK GROUPS	0	15	17	19	21	24	26	28	30
TESTING FOR LTBI AMONG ADULTS IN HIGH-RISK GROUPS	0	15	17	19	21	24	26	28	30

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
HIV/AIDS									
YOUTH FOCUSED INTERVENTIONS - IN-SCHOOL	5	28	31	34	37	40	44	47	50
WORKPLACE PROGRAMS	5	28	31	34	37	40	44	47	50
BLOOD SAFETY	0	50	57	64	71	79	86	93	100
IDU: OUTREACH	0	15	17	19	21	24	26	28	30
INTERVENTIONS FOCUSED ON FEMALE SEX WORKERS	0	15	17	19	21	24	26	28	30
INTERVENTIONS FOCUSED ON MALE SEX WORKERS	0	15	17	19	21	24	26	28	30
INTERVENTIONS FOCUSED ON MEN WHO HAVE SEX WITH MEN	0	15	17	19	21	24	26	28	30
YOUTH FOCUSED INTERVENTIONS - OUT-OF-SCHOOL	0	15	17	19	21	24	26	28	30
VOLUNTARY COUNSELLING AND TESTING	0	25	29	32	36	39	43	46	50
CONDOMS	0	25	29	32	36	39	43	46	50
PREVENTION OF MOTHER TO CHILD TRANSMISSION	95	100	100	100	100	100	100	100	100
ANTIRETROVIRAL THERAPY (ART)	0	40	46	51	57	63	69	74	80
SCREEN HIV+ CASES FOR TB	0	40	46	51	57	63	69	74	80
HIV PREVENTION FOR TB PATIENTS	0	40	46	51	57	63	69	74	80
NEGLECTED TROPICAL DISEASES									
LEPROSY MANAGEMENT AND SURVEILLANCE	80	90	91	93	94	96	97	99	100
VECTOR CONTROL	0	15	17	19	21	24	26	28	30
DENGUE									
PREVENTION									
INDOOR RESIDUAL SPRAYING	10	15	17	19	21	24	26	28	30
LARVICIDING	30	55	59	62	66	69	73	76	80
BIOLOGICAL VECTOR CONTROL	0	15	17	19	21	24	26	28	30
NON-COMMUNICABLE DISEASES									
CVD & DIABETES									
SCREENING FOR RISK OF CVD/DIABETES	20	60	66	71	77	83	89	94	100

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
TREATMENT FOR THOSE WITH VERY HIGH CHOLESTEROL BUT LOW ABSOLUTE RISK OF CVD/DIABETES	50	75	79	82	86	89	93	96	100
TREATMENT FOR THOSE WITH HIGH BLOOD PRESSURE BUT LOW ABSOLUTE RISK OF CVD/DIABETES	96	96	96	96	96	96	96	96	96
TREATMENT FOR THOSE WITH ABSOLUTE RISK OF CVD/DIABETES 20-30%	50	75	79	82	86	89	93	96	100
TREATMENT FOR THOSE WITH HIGH ABSOLUTE RISK OF CVD/DIABETES	5	28	31	34	37	40	44	47	50
TREATMENT OF NEW CASES OF ACUTE MYOCARDIAL INFARCTION (AMI) WITH ASPIRIN	50	75	79	82	86	89	93	96	100
TREATMENT OF NEW CASES OF ACUTE MYOCARDIAL INFARCTION (AMI) WITH ASPIRIN	50	75	79	82	86	89	93	96	100
TREATMENT OF CASES WITH ESTABLISHED ISCHAEMIC HEART DISEASE (IHD)	50	75	79	82	86	89	93	96	100
TREATMENT FOR THOSE WITH ESTABLISHED CEREBROVASCULAR DISEASE AND POST STROKE	50	75	79	82	86	89	93	96	100
STANDARD GLYCAEMIC CONTROL	20	60	66	71	77	83	89	94	100
RETINOPATHY SCREENING AND PHOTOCOAGULATION	5	28	31	34	37	40	44	47	50
NEUROPATHY SCREENING AND PREVENTIVE FOOT CARE	5	28	31	34	37	40	44	47	50
CVD& DIABETES AWARENESS	5	53	59	66	73	80	86	93	100
BREAST CANCER									
BASIC BREAST CANCER AWARENESS	5	43	48	53	59	64	69	75	80
SCREENING: CLINICAL BREAST EXAM	5	43	48	53	59	64	69	75	80
SCREENING: MAMMOGRAPHY	5	33	36	40	44	48	52	56	60
BREAST CANCER TREATMENT: STAGE 1	0	40	46	51	57	63	69	74	80
POST-TREATMENT SURVEILLANCE FOR BREAST CANCER PATIENTS	0	33	36	40	44	48	52	56	60
BASIC PALLIATIVE CARE FOR BREAST CANCER	0	33	36	40	44	48	52	56	60
AWARENESS ON BREAST CANCER	5	43	48	53	59	64	69	75	80
CERVICAL CANCER									
HPV DNA TEST	0	15	17	19	21	24	26	28	30
VISUAL INSPECTION WITH ACETIC ACID (VIA)	0	3	3	4	4	4	5	5	5
PAPANICOLAOU TEST (PAP SMEAR)	5	19	21	23	25	27	29	30	30
CERVICAL CANCER TREATMENT: STAGE I	0	40	46	51	57	63	69	74	80

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
POST-TREATMENT SURVEILLANCE FOR CERVICAL CANCER PATIENTS	0	33	36	40	44	48	52	56	60
BASIC PALLIATIVE CARE FOR CERVICAL CANCER	0	15	17	19	21	24	26	28	30
AWARENESS ON CERVICAL CANCER	5	43	48	53	59	64	69	75	80
COLORECTAL CANCER									
SCREENING: FAECAL OCCULT BLOOD TESTING	0	15	17	19	21	24	26	28	30
SCREENING: COLONOSCOPY	1	16	18	20	22	24	26	28	30
COLORECTAL CANCER TREATMENT: STAGE I	0	40	46	51	57	63	69	74	80
POST-TREATMENT SURVEILLANCE FOR COLORECTAL CANCER PATIENTS	0	33	36	40	44	48	52	56	60
BASIC PALLIATIVE CARE FOR COLORECTAL CANCER	0	15	17	19	21	24	26	28	30
AWARENESS ON COLORECTAL CANCER	5	43	48	53	59	64	69	75	80
ORAL CARE AND CANCER									
DENTAL CLEANING AND PREVENTIVE CARE	5	43	48	53	59	64	69	75	80
AWARENESS ON ORAL CANCER	5	43	48	53	59	64	69	75	80
RESPIRATORY DISEASE									
ASTHMA: INHALED SHORT ACTING BETA AGONIST FOR INTERMITTENT ASTHMA	30	45	47	49	51	54	56	58	60
ASTHMA: LOW DOSE INHALED BECLOMETASONE + SABA	30	45	47	49	51	54	56	58	60
COPD: SMOKING CESSATION	5	28	31	34	37	40	44	47	50
COPD: INHALED SALBUTAMOL	30	45	47	49	51	54	56	58	60
COPD: LOW-DOSE ORAL THEOPHYLLINE	30	45	47	49	51	54	56	58	60
COPD: IPRATROPIUM INHALER	30	45	47	49	51	54	56	58	60
COPD: EXACERBATION TREATMENT WITH OXYGEN	30	55	59	62	66	69	73	76	80
AWARENESS ON LUNG CANCER	5	43	48	53	59	64	69	75	80
NCD RISK FACTORS									
TOBACCO: MONITOR TOBACCO USE/PREVENTION POLICIES	5	28	31	34	37	40	44	47	50
TOBACCO: PROTECT PEOPLE FROM TOBACCO SMOKE	5	28	31	34	37	40	44	47	50
TOBACCO: OFFER TO HELP QUIT TOBACCO USE: MCESSATION	5	28	31	34	37	40	44	47	50

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
TOBACCO: WARN ABOUT DANGER: MASS MEDIA CAMPAIGN	5	43	48	53	59	64	69	75	80
TOBACCO: ENFORCE YOUTH ACCESS RESTRICTION	60	80	83	86	89	91	94	97	100
ALCOHOL: SCREENING AND BRIEF INTERVENTION FOR HAZARDOUS AND HARMFUL ALCOHOL USE	0	15	17	19	21	24	26	28	30
PHYSICAL INACTIVITY: BRIEF ADVICE AS PART OF ROUTINE CARE	30	55	59	62	66	69	73	76	80
PHYSICAL INACTIVITY: AWARENESS CAMPAIGNS TO ENCOURAGE INCREASED PHYSICAL ACTIVITY	5	43	48	53	59	64	69	75	80
SODIUM: SURVEILLANCE	0	15	17	19	21	24	26	28	30
SODIUM: KNOWLEDGE: EDUCATION AND COMMUNICATION	0	28	31	34	37	40	44	47	50
SODIUM: ENVIRONMENT: SALT REDUCTION STRATEGIES IN COMMUNITY-BASED EATING SPACES	0	28	31	34	37	40	44	47	50
REDUCING OBESITY: REPLACE SATURATED FATS WITH UNSATURATED FATS THROUGH REFORMULATION, LABELLING, AND FISCAL POLICY	5	18	19	21	23	25	26	28	30
REDUCING OBESITY: REDUCE SUGAR CONSUMPTION THROUGH TAXATION ON SUGAR-SWEETENED BEVERAGES	5	18	19	21	23	25	26	28	30
REDUCING OBESITY: AWARENESS ON FOOD SELECTION TO REDUCE UNSATURATED AND TRANSFAT	28	31	34	37	40	44	47	50	30
MENTAL HEALTH									
ANXIETY DISORDERS									
BASIC PSYCHOSOCIAL TREATMENT FOR ANXIETY DISORDERS (MILD CASES)	5	18	19	21	23	25	26	28	30
BASIC PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION FOR ANXIETY DISORDERS (MODERATE-SEVERE CASES)	10	30	33	36	39	41	44	47	50
INTENSIVE PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION FOR ANXIETY DISORDERS (MODERATE-SEVERE CASES)	0	10	11	13	14	16	17	19	20
DEPRESSION									
BASIC PSYCHOSOCIAL TREATMENT FOR MILD DEPRESSION	5	28	31	34	37	40	44	47	50
BASIC PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION OF FIRST EPISODE MODERATE-SEVERE CASES	10	30	33	36	39	41	44	47	50
INTENSIVE PSYCHOSOCIAL TREATMENT AND ANTI-DEPRESSANT MEDICATION OF FIRST EPISODE MODERATE-SEVERE CASES	0	10	11	13	14	16	17	19	20

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
PSYCHOSOCIAL CARE FOR PERI-NATAL DEPRESSION	0	25	29	32	36	39	43	46	50
PSYCHOSIS									
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR BIPOLAR DISORDER, PLUS MOOD-STABILIZING MEDICATION	5	18	19	21	23	25	26	28	30
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR BIPOLAR DISORDER, PLUS MOOD-STABILIZING MEDICATION	0	15	17	19	21	24	26	28	30
EPILEPSY									
BASIC PSYCHOSOCIAL SUPPORT, ADVICE, AND FOLLOW-UP, PLUS ANTI-EPILEPTIC MEDICATION	40	50	51	53	54	56	57	59	60
DEVELOPMENTAL DISORDERS									
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR DEVELOPMENTAL DISORDERS	0	15	17	19	21	24	26	28	30
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR DEVELOPMENTAL DISORDERS	0	15	17	19	21	24	26	28	30
CONDUCT DISORDERS									
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR BEHAVIOURAL DISORDERS	0	15	17	19	21	24	26	28	30
INTENSIVE PSYCHOSOCIAL INTERVENTION FOR BEHAVIOURAL DISORDERS	0	15	17	19	21	24	26	28	30
FAMILY PSYCHOEDUCATION (ADHD)	5	28	31	34	37	40	44	47	50
FAMILY PSYCHOEDUCATION (CONDUCT DISORDER)	5	28	31	34	37	40	44	47	50
ATTENTION DISORDERS									
METHYLPHENIDATE MEDICATION	0	15	17	19	21	24	26	28	30
DEMENTIA									
ASSESSMENT, DIAGNOSIS, ADVICE, AND FOLLOW-UP FOR DEMENTIA	0	15	17	19	21	24	26	28	30
DRUG USE/DEPENDENCE									
IDENTIFICATION AND ASSESSMENT OF NEW CASES OF DRUG USE/DEPENDENCE	0	25	29	32	36	39	43	46	50
BRIEF INTERVENTIONS AND FOLLOW-UP FOR DRUG USE/DEPENDENCE	0	25	29	32	36	39	43	46	50
SELF-HARM/SUICIDE									
ASSESS AND CARE FOR PERSON WITH SELF-HARM	0	25	29	32	36	39	43	46	50

PHC INTERVENTION PACKAGES	BASELINE (2016/17)	2023	2024	2025	2026	2027	2028	2029	2030
BASIC PSYCHOSOCIAL TREATMENT, ADVICE, AND FOLLOW-UP FOR SELF-HARM/SUICIDE	0	25	29	32	36	39	43	46	50
MENTAL HEALTH AWARENESS (SCHOOL BASED)	5	43	48	53	59	64	69	75	80
MENTAL HEALTH AWARENESS AND ASSESSMENT (INSTITUTION BASED- E.G. STATE CARE)	0	15	17	19	21	24	26	28	30
SOURCE OF BASELINES AND TARGETS: MDHS2016-17 AND OTHER STUDIES, NATIONAL PLANS, OPERATIONAL DATA FROM PROGRAMMES, AASANDHA, EXPERT AND KEY INFORMANT ESTIMATES									

B. COST BY PHC PACKAGES 2023-2030

PHC PACKAGES	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL MVR	TOTAL USD
RMNCAH										
INTERVENTIONS	23,019,341	24,738,808	26,489,931	28,329,344	30,002,808	31,625,570	33,201,398	34,738,487	232,145,686	15,054,843
PROGRAMME	6,946,211	8,050,295	9,422,791	10,793,267	12,159,724	13,524,501	14,888,541	16,252,101	92,037,431	5,968,705
TOTAL COSTS	29,965,551	32,789,103	35,912,722	39,122,611	42,162,532	45,150,071	48,089,939	50,990,588	324,183,118	21,023,548
IMMUNIZATION										
INTERVENTIONS	21,304,513	20,918,081	20,512,780	20,127,899	19,782,390	19,483,566	19,251,393	19,096,248	160,476,871	10,407,060
PROGRAMME	COST DRISTRIBUTED IN RMNCAH									
TOTAL COSTS	21,304,513	20,918,081	20,512,780	20,127,899	19,782,390	19,483,566	19,251,393	19,096,248	160,476,871	10,407,060
NUTRITION										
INTERVENTIONS	3,463,552	3,514,388	3,550,154	3,573,309	3,587,082	3,596,030	3,604,623	3,616,807	28,505,946	1,848,635
PROGRAMME	1,127,087	1,127,087	1,127,087	1,127,087	1,127,087	1,127,087	1,127,087	1,127,087	9,016,697	584,740
TOTAL COSTS	4,590,639	4,641,475	4,677,241	4,700,397	4,714,169	4,723,117	4,731,710	4,743,894	37,522,643	2,433,375
TB/HIV										
INTERVENTIONS	3,502,410	3,719,607	4,218,682	4,237,962	4,791,161	5,386,768	5,405,418	6,058,652	37,320,661	2,420,276
PROGRAMME	2,868,062	3,007,759	3,340,949	3,348,271	3,719,687	4,111,806	4,119,127	4,549,472	29,065,134	1,884,898
TOTAL COSTS	6,370,472	6,727,367	7,559,632	7,586,233	8,510,848	9,498,574	9,524,545	10,608,125	66,385,795	4,305,175
TROPICAL DISEASES (DENGUE, LEPROSY)										
INTERVENTIONS	5,874,790	6,170,488	6,488,457	6,833,321	7,203,112	7,596,821	8,011,616	8,444,207	56,622,812	3,672,037
PROGRAMME	4,423,299	5,398,187	6,758,237	7,567,952	8,927,992	9,737,706	11,097,757	11,907,471	65,818,601	4,268,392

PHC PACKAGES	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL MVR	TOTAL USD
TOTAL COSTS	10,298,089	11,568,675	13,246,694	14,401,273	16,131,104	17,334,527	19,109,373	20,351,678	122,441,413	7,940,429
NCDS (CVDS, DIABETES, COPDS, CANCERS)										
INTERVENTIONS	46,271,232	52,528,903	59,225,154	66,369,209	73,979,706	82,098,695	90,787,619	100,132,890	571,393,407	37,055,344
PROGRAMME	11,463,737	13,392,666	13,274,255	14,805,708	16,322,467	17,834,347	18,904,791	19,754,597	125,752,568	8,155,160
TOTAL COSTS	57,734,969	65,921,569	72,499,409	81,174,917	90,302,173	99,933,042	109,692,410	119,887,487	697,145,975	45,210,504
MENTAL HEALTH										
INTERVENTIONS	7,775,289	8,786,739	9,820,912	10,888,286	11,991,483	13,131,402	14,306,538	15,513,739	92,214,389	5,980,181
PROGRAMME	3,535,239	3,667,256	3,953,294	4,239,332	4,525,361	4,811,399	5,097,437	5,344,951	35,174,268	2,281,081
TOTAL COSTS	11,310,529	12,453,995	13,774,206	15,127,618	16,516,844	17,942,801	19,403,975	20,858,690	127,388,658	8,261,262
TOTAL PHC PACKAGES										
PHC INTERVENTIONS	141,574,762	155,020,265	168,182,684	182,240,947	198,120,060	214,065,697	229,803,346	246,536,711	1,535,544,471	99,581,354
PER CAPITA	240	258	275	292	312	332	350	369	305	20

C. COST BY DELIVERY LEVEL 2023-2030

DELIVERY LEVEL	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL MVR	TOTAL USD
HEALTH CENTRE L1-2	62,152,810	64,399,189	72,626,501	81,545,016	90,321,094	98,543,736	104,415,897	111,221,127	116,642,302	123,116,292	798,431,965	51,778,986
HEALTH CENTRE L3-4& URBAN HC	251,174,665	289,166,762	328,028,546	328,028,546	336,949,693	355,653,102	371,397,248	391,083,391	404,263,885	423,898,023	2,939,302,434	190,616,241
HOSPITAL	169,653,506	173,141,264	192,969,897	214,958,221	237,118,120	258,021,682	275,366,966	297,108,829	317,270,620	342,715,538	2,135,529,873	138,490,913
NATIONAL PROGRAMME	28,246,570	28,844,949	43,694,497	48,183,660	51,916,809	55,932,793	61,390,621	66,343,328	70,442,204	74,788,665	472,692,577	30,654,512
TOTAL	**511,227,552**	**555,552,164**	**637,319,442**	**672,715,444**	**716,305,716**	**768,151,313**	**812,570,731**	**865,756,675**	**908,619,011**	**964,518,518**	**6,345,956,850**	**411,540,652**
POLICY INTERVENTIONS COST UNATTRIBUTABLE TO A DELIVERY LEVEL				1,230,432,128								

D. COST BY HEALTH SYSTEM BLOCKS 2023-2030

HEALTH SYSTEM BLOCKS	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL MVR	TOTAL USD
HUMAN RESOURCES	430159824	473642852	516620248	554385921	588253807	619868318	652325492	685855584	4521112046	293,197,928
INFRASTRUCTURE	13648322	17688389	17688389	17688389	17688389	17688389	17688389	17688389	137467045	8,914,854
LOGISTICS	126,257,370	135,218,507	144,673,552	154,764,499	165,245,157	176,311,662	188,031,905	200,501,838	1,291,004,487	83,722,729
HEALTH INFORMATION SYSTEM	9716284	13348498	13337491	13183067	7693250	13161054	7671237	13150047	91260928	5,918,348
TOTAL	**579781799.6**	**639898245.6**	**692319679.6**	**740021875.6**	**778880602.6**	**827029422.6**	**865717022.6**	**917195857.6**	**6040844506**	**391,753,859**

E. INCREMENTAL COST 2023-2030

INCREMENTAL	2023	2024	2025	2026	2027	2028	2029	2030	AVERAGE ANNUAL MVR	AVERAGE ANNUAL USD
PROGRAMME COSTS	15,447,926	19,937,088	23,670,237	27,686,220	33,144,048	38,096,754	42,195,629	46,542,087	30,839,999	2,000,000
HUMAN RESOURCES	48,284,094	91,767,122	134,744,518	172,510,191	206,378,077	237,992,588	270,449,762	303,979,854	183,263,276	11,884,778
INFRASTRUCTURE	13,648,322	0	0	0	0	0	0	0		
LOGISTICS	16,614,587	25,570,928	35,000,198	45,042,478	55,463,764	66,456,694	78,095,468	90,482,375	51,590,812	3,345,708
HEALTH INFORMATION SYSTEMS	7,696,552	11,328,767	11,317,760	11,163,336	5,673,519	11,141,322	5,651,506	11,130,316	9,387,885	608,812
TOTAL INCREMENTAL COST	**101,691,481**	**148,603,905**	**204,732,713**	**256,402,225**	**300,659,408**	**353,687,358**	**396,392,365**	**452,134,632**	**276,788,011**	**17,949,936**

F. IMPLEMENTATION PLAN FOR PHC INVESTMENT

ACTIONS FOR PHC INVESTMENT	2022	2023	2024	2025	2026	2027	2028	2029	2030
POLICY DECISIONS									
ENDORSE PHC INVESTMENT COSTING									
ENDORSE AND INFORM POLICY ON PHC TEAM APPROACH IN DEVICE DELIVERY AT ALL GOVERNMENT HEALTH FACILITIES (INCLUDE THOSE EXTERNAL TO MOH)									
INCLUDE PHC AS A PROGRAMME IN THE HEALTH SECTOR PROGRAMME BUDGET (INCLUDING AT HEALTH FACILITY LEVEL THAT HAVE SEPARATE BUDGET)									
APPROVE FINANCING OF RURAL RETENTION POLICY									
ESTABLISH MECHANISMS FOR PARTNERSHIPS WITH HEALTH FOCUS NGOS: NGOS FINANCED TO PROVIDE COMMUNITY-BASED PHC INTERVENTIONS									
DESIGNATE ORGANIZATIONAL DEPARTMENT TO LEAD AND MONITOR IMPLEMENTATION OF PHC PROGRAMME									

ACTIONS FOR PHC INVESTMENT	2022	2023	2024	2025	2026	2027	2028	2029	2030
APPROVE POLICY DECISION ON NUMBER AND LOCATIONS OF THE TWO URBAN PHC CENTERS									
ENDORSE MINIMUM LIST OF POINT OF CARE MEDICAL DEVICES FOR PHC									
ENDORSE MINIMUM LIST OF MEDICINES FOR PHC									
COORDINATE WITH MNU TO REVISE PHC AND NURSING CURRICULUM TO MATCH THE COMPETENCY REQUIREMENTS OF PUBLIC HEALTH WORK IN THE FIELD									
HUMAN RESOURCES AND TRAINING									
ASSIGN PHC TEAM(S) WITH CLEAR ROLES AT EACH ADMINISTRATIVE ISLAND PROPORTIONAL TO POPULATION SERVED (INCLUDING NEW URBAN PHC CENTERS)									
RECRUIT CLINICAL PSYCHOLOGIST AT ATOLL LEVEL HEALTH FACILITIES									
CONDUCT IN-SERVICE PHC TRAINING WORKSHOPS ON CORE PHC PACKAGE MODULES FOR 20 PHC TEAMS ANNUALLY									
CONDUCT IN-SERVICE PHC TRAINING WORKSHOPS ON SCHOOL-BASED PHC INTERVENTIONS FOR 20 SCHOOL HEALTH TEAMS ANNUALLY									
RECRUIT LOCAL PUBLIC HEALTH SPECIALIST /SENIOR PROFESSIONAL AT REGIONAL/ZONE LEVELS									
PROGRAMME SUPERVISIONS									
CONDUCT SUPPORTIVE SUPERVISION VISITS FROM NATIONAL LEVEL TO ZONE AND ATOLL LEVELS ANNUALLY									
CONDUCT SUPPORTIVE SUPERVISION VISITS FROM ZONE LEVEL TO ATOLL LEVELS BIANNUALLY									
CONDUCT SUPPORTIVE SUPERVISION VISITS FROM ATOLL TO ISLAND LEVEL QUARTERLY									
AWARENESS AND OUTREACH									
CONDUCT AWARENESS CAMPAIGNS TARGETING COMMUNITY LEADERS AND INFLUENCERS ON PHC APPROACH TO SERVICE DELIVERY AND PHC POLICY									
CONDUCT OUTREACH CAMPS WITH SPECIALIST FROM TERTIARY TO ATOLL AND ISLAND LEVELS									
CONDUCT OUTREACH CAMPS WITH SPECIALIST FROM ATOLL HOSPITALS TO HEALTH CENTER ISLANDS									
INFRASTRUCTURE									
ESTABLISH 2 URBAN PHC CENTERS (DHAMANAVESHI) IN GREATER MALE' AREA (MALE'/ HULHUMALE')									

ACTIONS FOR PHC INVESTMENT	2022	2023	2024	2025	2026	2027	2028	2029	2030
HEALTH INFORMATION NETWORK AND SYSTEM									
CONNECT ALL GOVERNMENT HEALTH FACILITIES IN ONE LAN									
PROCURE NECESSARY SERVERS AND CLOUD STORAGE									
ROLL OUT DHIS-2 PUBLIC HEALTH MODULE/ PHC INFORMATION SYSTEM									
PROCURE COMPUTER/TABLETS FOR REAL-TIME DATA ENTRY									
CONDUCT WORKSHOPS FOR CAPACITY BUILDING IN USING DHIS2/PHC INFORMATION SYSTEMS									
LOGISTICS AND SUPPLIES									
PROCURE MOBILE DIGITAL DEVICES (MINIMUM LIST OF DEVICES) FOR COMMUNITY-BASED SCREENINGS (E.G. POINT OF CARE SUGAR/CHOLESTEROL TESTING, BREAST CANCER SCREENING ETC)									
MAINTAIN STOCK FOR ESSENTIAL MEDICINES AND MEDICAL SUPPLIES FOR PHC INTERVENTIONS (MINIMUM MEDICINE LIST FOR PHC)									

G. MONITORING FRAMEWORK OF THE PHC INVESTMENT CASE

The conceptual framework proposed by Primary Health Care Performance Initiative (PHCPI)[81] is adopted in monitoring progress in monitoring the implication of the proposed interventions of PHC packages, policy and programme and investments in health system building blocks. The conceptual framework includes 5 domains (see figure 1).

1. System: System functions enable the provision of services, and thus understanding the systems context is critical to explain determinants of PHC performance.[82] System characteristics include (i) governance and leadership, (ii) health financing and (iii) adjustments to population health needs, to facilitate PHC investments that enable inputs and delivery.

2. Inputs: Inputs focus on the health system building blocks, the crude availability of inputs at the facility level and reflects whether the systems in place to ensure availability of inputs are functioning.[2] Inputs include availability of (i) human resources, (ii) information systems, (iii) medicines and supplies, (iv) infrastructure, and (v) finance at service delivery levels.

3. Service delivery: service delivery reflects the intersection of supply components (providers, infrastructure, supplies) and the demand side (patient/population needs, access, utilization) and includes concepts of high quality, people-centred PHC service, first contact accessibility to integrated services (which is user-oriented, coordination, comprehensiveness, continuity, and safety).[2] Service delivery include (i) access (health facility and service inputs), (ii) availability of PHC service providers, (iii) organisation and management of PHC service (PHC management, team-based care, supportive supervision, community linkages for population health management, information management, and monitoring and continuous quality improvement), and (iv) people-centred care (first contact accessibility[83], coordination of care, comprehensiveness, continuity and safety).

4. Outputs: Outputs includes both prevention and treatment outputs of PHC interventions. The outputs do not rely solely on coverage of key services, but also on effective coverage, and quality-adjusted service coverage.[2] Outputs include (i) health promotion, (ii) diseases and disability prevention, (iii) RMNCAH, (iv) communicable diseases, and (v) NCDs and mental health.

5. Outcomes: Outcomes reflect the increasing burden of disease attributed to people-centred care and health conditions[2]. This includes (i) health status (morbidity and mortality) (ii) responsiveness to people (iii) equity (iv) efficiency, and (iv) health system resilience.

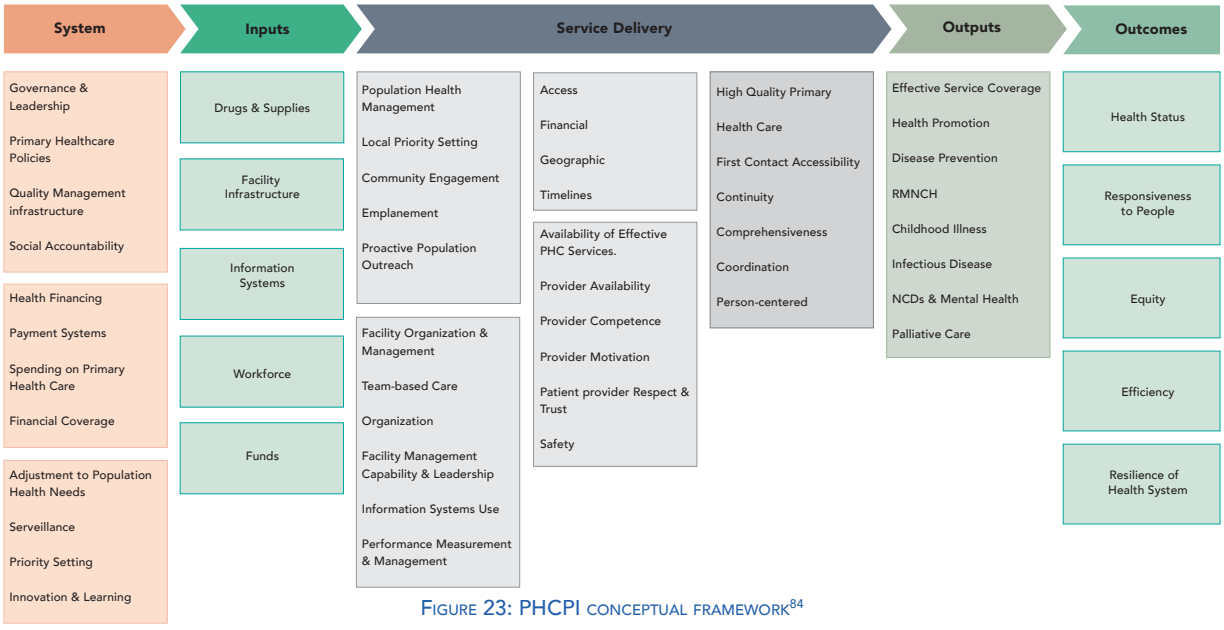


FIGURE 23: PHCPI CONCEPTUAL FRAMEWORK[84]

[81] PHCPI is a partnership between the Bill & Melinda Gates Foundation, World Bank Group, World Health Organization, UNICEF, and the Global Fund, with technical partners Ariadne Labs and Results for Development.
https://improvingphc.org/
[82] The Domains of PHCPI's Conceptual Framework.
https://improvingphc.org/sites/default/files/1005_Conceptual%20Framework%20Domains_4.pdf
[83] First contact accessibility: people have good accessibility to PHC when they perceive they can conveniently access PHC services when and how they need them.
[84] Reproduced from PHCPI.
https://improvingphc.org/

INDICATORS

In the selection of indicators, PHC core and expanded indicators were used as a guide. While some indicators for Maldives PHC are consistent with PHCPI core indicators, some indicators are localized and expanded based on the country context and the PHC intervention packages and health system and policy interventions identified for PHC investments. The central questions considered in determining the indicators are the level of granularity of data needed for the measurement of each indicator (facility, atoll and national, disaggregation by sex and age) and where that data is coming from (existing system/platforms and its enhancements, developing new measures).

H. PHC PERFORMANCE INDICATORS AND TARGETS

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
System	Leadership and governance	PHC included as a programme budget area in the annual budget of health sector and health facilities (activity indicator)	national, hospital	none	national	hospitals	national & all gov. health facilities	national & all gov. health facilities	national & all gov. health facilities	national & all gov. health facilities	national & all gov. health facilities	national & all gov. health facilities	Government budget	measured annually
		Partnerships mechanism with health focus NGOs: NGOs financed to provide community based PHC interventions (activity indicator)	national, programme area	none	0	2	4	6	8	10	10	10	MoH administrative data; independent assessment	measured annually
	Financing	Rural retention policy financed (activity indicator)	national, health facility boards	none	national	health facility boards	all gov. health facilities	all gov. health facilities	all gov. health facilities	all gov. health facilities	all gov. health facilities	all gov. health facilities	MoH health workforce records/ PHC programme records; facility staff records	measured annually
		Percent of government health spending dedicated to PHC numerator: government spending on PHC interventions (PHC programme budget) denominator: total government spending on health service delivery	National, atoll, hospital	1 (NHA-2020 MoH draft)	6	8	10	12	14	16	18	20	Government budget; MoF	measured annually. After the first year annual increment of 2%

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Inputs	PHC workforce	Community health workers density per 1,000 population numerator: number of community health officers and/or community health nurses in PHC team roles delivering PHC interventions denominator: resident population	National, atoll, island, urban (cities), local/expat, gender	1.4 - (WHO/ PHCPI)	2	4	4	6	6	6	6	6	MoH health workforce records/ PHC programme records; facility staff records	measured annually
		Nurse density per 1,000 population numerator: number of nurses in PHC team roles delivering PHC interventions denominator: resident population	national, atoll, island, urban (cities), local/expat, gender	6.6 not specific to PHC – (WHO)	6	6	6	6	6	6	6	6	MoH health workforce records/ PHC programme records; facility staff records	measured annually
		Number of islands with PHC teams delivering PHC interventions in the past 3 months numerator: islands with PHC teams delivering PHC interventions denominator: administrative islands with a government health facility	national, atoll, island, urban (cities), local/expat, gender	4.4 not specific to PHC – (WHO)	4	4	4	4	4	4	4	4	MoH health workforce records/ PHC programme records; facility staff records	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Inputs	PHC workforce	Percent of locals in the PHC team in the atolls receiving rural retention allowance numerator: local CHWs, nurses and medical officers in PHC teams in the atolls receiving rural retention allowance denominator: all local CHWs, nurses and medical officers in PHC teams in the atolls	national, atoll, island, gender	none	25	50	100	100	100	100	100	100	Facility salary remittance data; MoH health workforce records	measured every quarterly (every 3 months)
		Percent of PHC workforce completing in-service training in PHC intervention packages (RMNCAH, immunization, growth and development monitoring; PEN package; PFA, GBV response; CD national guidelines; home-based care) in the past 3 months numerator: number of PHC teams members completing at least 1 PHC training modules denominator: all CHWs, nurses and medical officers	national, atoll, island, urban (cities), local/expat, gender	10 (not specific to PHC team – MoH/ HPA)	50	75	100	100	100	100	100	100	MoH PHC programme data; facility administrative data; MoH training data	measured every quarterly (every 3 months)
	Health Information Systems	Percent of health facilities connected with one network numerator: number of government health facilities connected with one network denominator: total health facilities	health facility, atoll, island, central	none	10	25	50	75	100	100	100	100	MoH HMIS; independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Inputs	Health Information Systems	Proportion of health facilities updating information in DHIS-2 public health modules numerator: number of government health facilities with up-to-date data on PHC indicators denominator: total health facilities with access to PHC data entry platform (DHIS-2 public health modules or separate portal)	health facility, atoll, island, central	none	10	25	50	75	100	100	100	100	MoH HMIS; DHIS-2 facility records, independent assessment	measured every quarterly (every 3 months)
	Infrastructure	Urban PHC centre density per 100,000 population (GMA) numerator: number of urban PHC centres denominator: total population in urban areas	national, city, gender	<1 (calculated)	2	2	2	4	4	4	4	4	MoH statistics; MBS population statistics	measured annually
	Finance	Percent of government health facilities with separate budget allocated for PHC numerator: number of health facilities with separate budget allocated for PHC denominator: number of government health facilities	health facility, atoll, island, central	none	10	25	50	75	100	100	100	100	MoF budget book, Health facility budget	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Inputs	Medicines and supplies	Percent of health facilities reporting stockouts of medicines and supplies for PHC interventions in the past 3 months numerator: number of government health facilities with stockouts of essential medicines/supplied for providing PHC packages of interventions denominator: number of government health facilities providing PHC interventions	health facility, atoll, island, central	60 (est. MoH)	50	40	30	20	10	5	5	5	MoH medical supplies database, facility records; independent assessment	measured every quarterly (every 3 months)
		Percent of emergency referrals due to non-availability of essential medicine and/or medical supplies in the past 3 months numerator: emergency referrals due to stockout of essential medicine/supplies denominator: all emergency referrals	health facility, atoll, island, central	30 (est. using Aasandha stats)	30	20	10	10	5	5	5	5	Aasandha data; facility records, independent assessment	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	Access	Service provider absence rate (%) numerator: number of PHC team members (randomly selected) who are absent from the facility/field on an unannounced visit (non-vacant posts) denominator: ten randomly sampled workers who are supposed to be on duty at the facility/ field on the day of the assessment.	health facility, atoll, island, central, gender	20 (est. facility managers)	20	10	10	10	5	5	5	5	independent assessment	measured every quarterly (every 3 months)
		Home visit rate (%) numerator: number of households visited by PHC team in the past 3 months (minimum 1 visit, if more than 1 visit also counted as 1) denominator: number of households with vulnerable population (under 5, pregnant, elderly, PWD, bedridden)	health facility, atoll, island, central, vulnerability, gender	30 (est. practitioner)	40	40	50	50	60	60	70	70	MoH HMIS; DHIS-2 facility records, independent assessment	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	Availability of PHC services	Caseload per community health worker in the past 3 months numerator: number of outpatient visits recorded in outpatient records of PHC clinics (e.g. ANC/ NCD) at the health facility denominator: number of community health officers and/ or community health nurses in PHC team roles	health facility, atoll, island, central, gender, age	1400 (est. PHCPI)	1400	1000	800	700	600	500	500	500	MoH PHC programme data facility records, independent assessment	measured every quarterly (every 3 months)
		Adolescents contact rate with PHC team in the past 3 months (%) numerator: number of adolescents (12-17) provided with information on safe reproductive health practices (in collaboration with school, CSOs) denominator: number of adolescents (12-17) in the island	health facility, atoll, island, central, gender, age	10 (est.)	20	20	40	40	60	60	80	80	MoH PHC programme data facility records, independent assessment	measured every quarterly (every 3 months)
		Adherence to standard guidelines (PEN package) in the past 3 months (%) numerator: number of people examined (taken relevant history and examination questions asked) by the provider as per the PEN package denominator: total number of people on the NCD clinic register	health facility, atoll, island, central, gender	none	20	40	60	80	90	90	90	90	MoH supervision reports; PHC programme data; prescription audit	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	Organisation and management	Stakeholder contribution at planning and management meetings for health interventions in the past 3 months (%) numerator: number of government stakeholders contributing to planned health interventions denominator: number of government stakeholders in the island	health facility, atoll, island, central, gender	10 (est. MoH/ HPA)	20	30	40	60	60	80	80	80	Facility records; independent assessment	measured every quarterly (every 3 months)
		Outreach camps for specialised screening of NCDs and disability in the past 3 months (%) numerator: number of outreach camps held with support from health service providers with specialists denominator: number of outreach camps planned (set target 1 camp per quarter) for CVD, Diabetes, cancer, COPD,mental health, disability	health facility, atoll, island, central	none	40	60	60	80	80	90	90	90	MoH PHC programme data; facility records	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	Organisation and management	Rate of supervision and support to PHC teams in the past 3 months(%) numerator: number of supportive supervisions denominator: number of monitoring and supervisions to be conducted (includes supervision from programme and atoll facilities - set target minimum 6).	health facility, atoll, island, central	10 (est. MoH/ HPA)	40	60	60	80	80	90	90	90	MoH supervision reports; PHC programme data; facility records; independent assessment	measured every quarterly (every 3 months)
	People-centred care	High-risk pregnancy screening rate in the past 3 months (%) numerator: number pregnant women screened for high risk pregnancies in the island (includes anaemia, hypertension, diabetes, previous history) denominator: number of resident pregnant women in the island	health facility, atoll, island, central, age	80 (est. practitioner)	80	80	90	90	95	95	100	100	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/ local council records	measured every quarterly (every 3 months)
		Under 5 year olds screening rate for developmental delays in the past 3 months (%) numerator: number of children 0-2 years assessed for development delay denominator: number of children 0-2 years resident in the island	health facility, atoll, island, central, gender, age	none	20	40	60	80	80	90	90	100	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/ local council records	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	People-centred care	Adolescent girls' nutrition status screening rate in the past 3 months (%) numerator: number of adolescents girls 12-17 years screening nutrition status (BMI, micronutrients) denominator: number of adolescent girls 12-17 years resident in the island	health facility, atoll, island, central	none	20	40	60	80	80	90	90	90	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/ local council records	measured every quarterly (every 3 months)
		HIV screening rate in the past 3 months (%) numerator: number of people in high-risk groups screened for HIV denominator: number of estimated high-risk population (substance users, foreign migrant workers, sex workers, LGBTIQ) resident in the island	health facility, atoll, island, central, gender, high risk group	5 (est. practitioner)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/ local council records	measured every quarterly (every 3 months)
		Adherence to evidence-based prescription of antibiotics in the past 3 months (%) numerator: number of cases prescribed antibiotics based on treatment guideline or culture sensitivity denominator: number of antibiotic prescriptions issued from the health facility	health facility, atoll, island, central, gender	10 (est. practitioner)	20	40	40	60	60	80	80	80	MoH HMIS-DHIS-2. facility records, PHC programme records, Aasandha records, prescription audit, independent assessment	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	People-centred care	Breast cancer screening rate in the past 3 months (%) numerator: number of women 35-69years screened for breast cancer by any method denominator: number of women 35- 69 years in the island	health facility, atoll, island, central	1 (est. practitioner)	10	20	30	30	30	30	30	30	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/ local council records	measured every quarterly (every 3 months). Maximum annual screening advised for a person. Hence to cover a third of target group
		Thalassaemia blood transfusion rate in the past 3 months (%) numerator: number of patients receiving blood transfusions denominator: number of patients diagnosed with thalassaemia major (patients with bone marrow transplant not included)	health facility, atoll, island, central, gender, age, nationality	80 (est. practitioner)	80	80	90	90	95	95	100	100	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured every quarterly (every 3 months)
		Tobacco cessation dropout rate in the past 3 months (%) numerator: number of tobacco smokers not attending cessation clinic denominator: number of tobacco smokers (those enrolled in the programme)	health facility, atoll, island, central, gender, age, nationality	50 (est. practitioner)	50	45	40	35	30	30	25	25	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured every quarterly (every 3 months)

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Service delivery	People-centred care	Glycaemic control rate among diabetic patients in the past 3 months (%) numerator: number of diabetic patients with glycaemic control denominator: number of patients diagnosed with diabetes in the island	health facility, atoll, island, central, gender, age	30 (est. practitioner)	30	40	50	60	70	80	90	90	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured every quarterly (every 3 months)
		Healthy ageing support rate in the past 3 months (%) numerator: number of people 50+ years participating in mobility exercise programmes denominator: number of people 50+ years resident in the island	health facility, atoll, island, central, gender, age	5 (est. NGOs)	10	20	30	40	50	70	80	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment; MBS population records/local council records	measured every quarterly (every 3 months)
Outputs	RMNCAH	Adolescent (<19 years) pregnancy rate (%) numerator: number of pregnant women below 18 years (include all conceptions//that result in early spontaneous abortions) denominator: number of pregnant women on the island (includes all conceptions/that result in early spontaneous abortions)	health facility, atoll, island, central, age	1.7 (MoH stat book 2019-2020)	1.7	1.5	1	1	1	0	0	0	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Outputs	RMNCAH	PNC coverage with 4 visits (%) numerator: number of postnatal women who had 4 PNC visits with the PHC team denominator: number of post-natal women in the island	health facility, atoll, island, central, age	90 (DHS 2016-17)	90	95	95	95	95	95	95	95	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		DPT3 coverage rate numerator: number of children of 2 years with DPT3 vaccination denominator: number of children 2 years	health facility, atoll, island, central, gender	85 (DHS 2016-17)	90	95	95	95	95	95	95	95	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
	CDs	HIV cases detected (%) numerator: number of HIV cases detected among high-risk groups (substance users, foreign migrant workers, LGBTIQ, sex workers) denominator: number of estimated incident cases in the year	health facility, atoll, island, central, gender, age, high-risk group	<1 (HPA)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. national HIV programme; facility records, PHC programme records, independent assessment	measured annually
		Mosquito (Aedes) infestation rate (Breteau index) numerator: number of positive containers denominator: number of sites/households inspected	health facility, atoll, island, central, type of site	60 (est. practitioners)	60	50	40	40	30	30	20	20	MoH HMIS-DHIS-2. national programme; facility records, PHC programme records, independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Outputs	NCDs	CVD risk (>30%) prevalence numerator: number of people with CVD risk >30% (PEN package measure based on laboratory and non-laboratory parameters of smoking, weight, family and clinical history, blood sugar, blood pressure) denominator: number of people screened for NCD risk factors	health facility, atoll, island, central, gender, age	35 (est. – prelim STEPS 2021)	35	30	30	25	25	20	20	20	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Chromic kidney disease (CKD) detection rate (%) numerator: number of cases with CKD denominator: estimated incidence of CKD)	health facility, atoll, island, central, gender, age	58% (est. – using MoH stat book – 2019-2020)	60	60	70	70	80	80	80	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Self harm detection rate (%) numerator: number of cases with self harm detected denominator: estimated incidence of self harm (self-inflicted injuries, attempts to suicide)	health facility, atoll, island, central, gender, age	10 (est. – prelim STEPS 2021)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Cancer detection rate (%) numerator: number of people diagnosed for cancer (oral, breast, cervical, bowel) in the year denominator: estimated incidence of cancer for the year	atoll, island, central, gender, age	10 (est. using MoH stat book – 2019- 2020)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Outputs	Health promotion, disease and disability prevention	Anaemia prevalence among adolescent girls numerator: number of adolescent girls (12-17) with anaemia (measurement Hb) denominator: number of adolescent girls in the island	health facility, atoll, island, central, age	50 (est. based on DHS for children and women)	50	40	30	30	20	20	20	20	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Diarrhoea incidence numerator: number of cases of diarrhoea reported denominator: number of people in the island	health facility, atoll, island, central, gender, age	10 (est. using disease reports)	10	8	6	4	4	4	4	4	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Disabilities detection rate under 5 years (%) numerator; number of children under 5 years with disabilities identified denominator: estimated incidence of disabilities among children under 5 years (including structural disabilities at birth and non-structural disabilities during development in the firs five years of life)	health facility, atoll, island, central, gender, age	10 (est. based on NSPA stats)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually
		Age-related disability detection rate numerator: number of people 50+ years with functional disability detected (Washington group measure) denominator: estimated incidence of disabilities among people 50+ years	health facility, atoll, island, central, gender, age	10 (est. based on NSPA stats)	10	20	30	40	50	60	70	80	MoH HMIS-DHIS-2. facility records, PHC programme records, independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Outcomes	Health status	Neonatal mortality rate per 1,000 population numerator: number of deaths in < 28 days of life denominator: number of live births	health facility, atoll, island, central, gender, age	4 (MoH statbook 2019-2020)	4	4	3	3	3	2	2	2	MoH CRVS (GEMEN database)	measured annually
		Adult (30-70yrs) mortality from NCDs (CVD, diabetes, COPD, cancer) numerator: number people 30-70 years died with underlying CVD, cancer, diabetes, or COPD (excludes deaths from accident/injury) denominator: number of people 30-70 in the island	health facility, atoll, island, central, gender, age, comorbidities	80 (MoH – stat book 2019-2020)	80	80	78	78	76	76	74	74	MoH CRVS (GEMEN database)	measured annually
		Cancer prevalence (%) numerator: number of cancer cases (old and new) in the population denominator: number of people in the island	health facility, atoll, island, central, gender, age, comorbidities	20 (est. wHO)	20	20	20	18	18	18	16	16	MoH HMIS-DHIS-2. facility records, independent assessment	measured annually
		HIV prevalence (%) numerator: number of HIV cases (old and new) in the population denominator: number of people in the island	health facility, atoll, island, central, gender, age, high-risk group	<1 (HPA programme)	1	1	1	1	1	1	1	1	MoH HMIS-DHIS-2. national programme, facility records, independent assessment	measured annually

DOMAIN	SUBDOMAIN	INDICATOR	LEVEL OF GRANULARITY	BASELINE NATIONAL	TARGET								DATA SOURCE	NOTES (FREQUENCY, LIMITATIONS ETC.)
					2023	2024	2025	2026	2027	2028	2029	2030		
Outcomes	Health status	Dengue severity - hospitalisation rate (%) numerator: number of dengue cases admitted denominator: number of dengue cases reported from the island	health facility, atoll, island, central, gender, age	6 (MoH – stat book 2019-2020)	6	5	5	4	4	3	3	2	MoH HMIS-DHIS-2. national programme, facility records, independent assessment	measured annually
		Disability prevalence (%) numerator: number of people with functional disability (Washington group measure) denominator: number of people in the island	health facility, atoll, island, central, gender, age	9 (HIES 2019)	9	9	9	8	8	8	6	6	MoH HMIS-DHIS-2. facility records, independent assessment (HIES)	measured annually
	Equity	Malnutrition among vulnerable households numerator: malnutrition in children under 5 among vulnerable households (any household receiving benefit from NSPA SP schemes) denominator: number of children under 5 years in the island	health facility, atoll, island, central, gender, age, benefit type	2 (est.) proxy from HIES -17% living below median income	2	2	2	1	1	1	1	1	MoH HMIS-DHIS-2. PHC programme records; facility records, independent assessment	measured annually
	Efficiency & resilience	Emergency referral rate numerator: number of cases referred from health facility denominator: number of cases presenting to health facility	health facility, atoll, island, central, gender, age	10 (est.) using Aasandha stats	10	10	8	8	6	6	5	5	Aasandha data; facility records, independent assessment	measured annually
		UHC effective coverage	national	66.9% (IHME)	70	75	75	80	80	85	85	90	NHA/ DHS, independent assessment	measured annually

COMMITTEES FOR PHC INVESTMENT CASE

STEERING COMMITTEE

Dr. Shah Mahir, State Minister, MoH
Safiyya Mohamed Saeed, Deputy Minister, MoH
Maimoona Aboobakuru, Director General Public Health, HPA
Aminath Shaina Abdulla, Deputy Director General, MoH
Nayaz Ahmed, Deputy Director General, MoH
Moomina Abdullah, Director, MoH
Aishath Shahula Ahmed, UNICEF
Sudirriku Padmal Desilva, WHO

TECHNICAL COMMITTEE

Dr. Mariyam Jenyfa, HPA
Ramla Wajeeh, MoH
Aminath Shahuza, HPA
Sofoora Kawsar Usman, MoH
Mariyam Raufa, MoH
Aroofa Ahmed Naseer, MoH
Mariyam Mohamed, MoH

DOCUMENTS REVIEWED PHC INVESTMENT CASE

Key documents reviewed in the preparation of the investment case are listed below. It includes published literature, and unpolished reports and policy papers from Ministry of Health, Maldives relevant to the development of the investment case.

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