REPUBLIC OF MAURITIUS

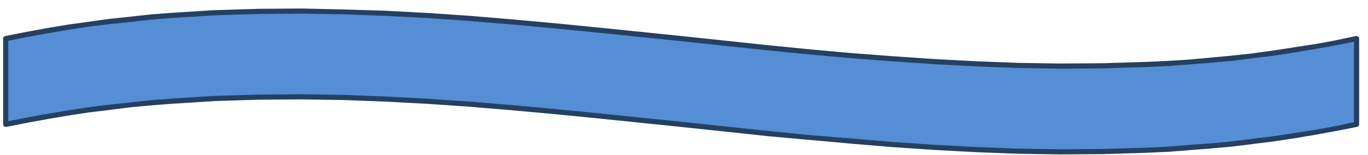
DRAFT
HEALTH SECTOR STRATEGY
2017-2021

Caring for People's Health across the Lifespan

Ministry of Health and Quality of Life

HEALTH SECTOR STRATEGY

2017-2021



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Acronyms

AHP	**Allied Health Professionals**
BOI	**Board Of Investment**
CAGR	**Compound Average Growth Rate**
CHL	**Central Health Laboratory**
CNS	**Central Nursing School**
CEMC	**Central Efficiency Management Committee**
CPD	**Continuing Professional Development**
CTS	**Computerized Tomography Scan**
DALE	**Disability Adjusted Life Expectancy**
ERT	**Education, Research and Training**
GEH	**Government Expenditure on Health**
GEM	**Gender Empowerment Measure**
GIS	**Geographical Information System**
GNP	**Gross National Product**
GOM	**Government of Mauritius**
HDI	**Human Development Index**
HDR	**Human Development Report**
HFM	**Hospital Franchising Model**
HPI	**Human Poverty Index**
HR	**Human Resources**
HUG	**Hôpitaux Universitaires de Genève**
ICHA	**International Classification of Health Accounts**
ICT	**Information and Communication Technology**
IDUs	**Injecting Drug Users**
MHO	**Medical Health Officer**
MID	**Maurice Ile Durable**
MIH	**Mauritius Institute of Health**
MMR	**Maternal Mortality Ratio**
MOFED	**Ministry of Finance and Economic Development**
MOH&QL	**Ministry of Health and Quality of Life**
MOU	**Memorandum of Understanding**
MRI	**Magnetic Resonance Imaging**
MST	**Methadone Substitution Therapy**
MTEF	**Medium Term Expenditure Framework**
NAC	**National AIDS Committee**
NAS	**National AIDS Secretariat**
NCD	**Non-Communicable Diseases**
NEP	**Needle Exchange Programme**
NSF	**National Multi Sectoral HIV and AIDS Strategic Framework**
NHA	**National Health Accounts**
NHAIPM	**National Health Accounts Interim Projection Model**
NSFD	**National Service Framework for Diabetes**

PBB	**Programme-Based Budgeting**
PEP	**Post Exposure Prophylaxis**
PHC	**Primary Health Care**
PLWHA	**People Living with HIV and AIDS**
PFI	**Private Finance Initiation**
PPP	**Public Private Partnership**
PRB	**Pay Research Bureau**
QEH	**Queen Elizabeth Hospital**
SIDS	**Small Island Development State**
SAMU	**Service d'Aide Medicale Urgente**
TEC	**Tertiary Education Commission**
UNDP	**United Nations Development Programme**
UNFPA	**United Nations Population Fund**
UOM	**University of Mauritius**
USAID	**United States Agency for International Development**
VCT	**Voluntary Counselling and Testing**
WHO	**World Health Organization**
WISN	**Workload Indicator of Staff Needs**

Foreword

(TO BE WRITTEN AFTER FINALISATION)

VISION AND MISSION STATEMENT

VISION

A healthy nation with a constantly improving quality of life.

STRATEGIC DIRECTION 2017-2021

- Provide quality clinical services through modern infrastructure and skilled human resources.
- Reduce the burden of premature morbidity, mortality and disability associated with Non-communicable diseases (NCDs) and their risk factors.
- Address healthcare challenges of an ageing population and develop a strategy for the demographic viability of the country.
- Strengthen programs related to the prevention and control of vector borne and waterborne diseases, emerging and re-emerging infectious diseases.
- .Improve environmental and occupational health as well as food safety and monitoring and respond effectively to the impact of climate change on health.
- Improve primary health care services and set up a referral mechanism to control the flow of patients attending regional hospitals.
- Improve the quality of life of people living with HIV/AIDS.
- Promote Mauritius as a medical travel destination.
- Develop traditional medicine as an alternative to allopathic medicine.
- Adopt measures to reduce wastage at all levels of health services.
- Use modern communication tools to improve health care delivery and modernize health services for greater efficiency and effectiveness and for sensitization and health education.

Executive Summary

(TO BE WRITTEN AFTER FINALISATION)

1. Introduction

Government of Mauritius acknowledges that good health is a driver of economic and human development and that no one should be denied access to life-saving or health-promoting interventions. To this end, Government provides free affordable quality health services, from primary care to specialized services to the population, regardless of their income, gender, race and religion.

1.1 Socio-Economic Status

1.1.1 The Republic of Mauritius, with a total land area of 2040 km², which consists of a main island and a group of small islands, including Rodrigues and Agalega is located in the Indian Ocean at latitude 20° south and longitude 58° east, some 800 kilometres from the south-east of Madagascar.

1.1.2 **TABLE I** indicates some of the key socio-economic indicators of the Republic of Mauritius.

TABLE I: Key Socio-Economic Indicators, Republic of Mauritius, 2015

Indicators	Value
Total Population	1,262,862
Gross Domestic Product	Rs 408.3 bn (US$ 11.6 bn)
GDP per capita	Rs 323,300 (US$ 9,206)
GDP Growth Rate	+3.0%
Inflation Rate	1.3%
Literacy Rate 2014 (15–24 years)	98.1%
Human Development Index 2014 (out of 188 countries)	0.777 (63rd, 1st in Africa)
Quality of Life Index 2014 (out of 223 cities)	Port-Louis: 82nd (1st in Africa)
Population with access to improved sanitation facilities (%)	93%

Source: Statistics Mauritius, Human Development Report 2015, Mercer Report 2014, MDG Report 2015 and World Bank

1.1.3 The estimated population of the Republic of Mauritius, as at 31 December 2015, was 1,262,862. With a per capita income of around only US$ 250 at the time of independence in 1968, Mauritius has steadily progressed from a low-income agricultural-based economy to a diversified upper middle income economy with the tourism industry, ICT and financial services as the principal contributing sectors to overall gross domestic product. In 2015, GDP growth rate in Mauritius was around 3.0% and GDP per capita was Rs 323,300 or US$ 9,206.

1.1.4 Mauritius is classified among the countries having achieved high human development. The 2015 United Nations Development Program Human Development Report (HDR) ranks Mauritius 63rd among 188 countries. As regards its Human Development Index (HDI), the country has made constant progress. HDI for Mauritius has improved from 0.654 in 1980 to 0.777 in 2014.

1.1.5 There is no extreme poverty in Mauritius. The proportion of people living below the international poverty line of US$ 1.25 (PPP) a day is negligible at less than 1%. Based on US$ 1.25 (PPP) per day, the poverty gap, which measures the depth of poverty, is also less than 1%.

1.1.6 **TABLE II** below illustrates the poverty indicators based on $ 1.25 a day poverty line with data from the four Household Budget Surveys (HBS 1996/97, 2001/02, 2006/07 and 2012) undertaken by Statistics Mauritius.

TABLE II: Poverty Indicators Based on $ 1.25 a Day Poverty Line

	1996-97	2001-02	2006-07	2012
Proportion of Population Below $ 1.25 (PPP) per day (%)	<1	<1	<1	<1
Poverty Gap Based on $ 1 .25 (PPP) a day (%)	<1	<1	<1	<1

Source: Statistics Mauritius/MDG Report 2014

1.1.7 The Mauritian economy remains vulnerable to the externalities of globalization and trade liberalization. Despite external economic crisis, especially sluggish economic growth in the Euro zone on which Mauritius is highly dependent for its export of goods and services, the economy grew by 3.0% in 2015. Besides, with the withdrawal of the United Kingdom from the European Union, it is anticipated that Brexit will have a negative impact on trade and investment flows. Growth continues to be supported by tourism, information and communications technology (ICT) and the financial and insurance sectors, which grew by 8.5%, 7.1% and 5.2%, respectively in 2015.

1.1.8 The Economic Mission Statement (EMS) of Government on Achieving the Second Economic Miracle and Vision 2030 is to position Mauritius into the league of high income countries. According to the EMS, the three core areas on which the development of Mauritius will be based to transform the economy are namely, a revamped and dynamic manufacturing base, the development of the ocean industry and the revisiting of the services sector.

1.1.9 Budget 2016/17, presented under the theme of "A New Era of Development", provides a strong economic growth direction to drive Mauritius into the league of high-income

nations. Some among the overarching strategic directions of the Budget, to attain an estimated 4.1% economic growth rate during financial year 2016/17, are:-

- improving ease of doing business,
- favourable tax treatment to Small Medium Enterprises,
- job creation and skills development,
- modernization of the manufacturing sector,
- spurring of the agricultural, tourism and financial sectors,
- digitalization of the economy,
- development of infrastructure, and
- consolidation of the social sector, including health.

1.2 Health Care Financing

1.2.1 The Beveridge model of health care financing drives the public health sector. Under this model, Government raises revenue through taxes and other means, to finance the delivery of social services, including health.

1.2.2 In addition, households spend significantly on health in the private sector. Other entities in the national health care financing system include private firms, non-governmental organizations, bilateral and multilateral agencies.

TABLE III: Health Care Expenditure (FY 2016/17)

Indicators	Value (Rupees)	Value (US Dollars)
MOH and QL Expenditure on Health	10.9 billion	299.1 million
MOH and QL Budget as % of Total Government Expenditure	7.7%	-
Per Capita Public Expenditure on Health (MOH and QL Budget only)	8,631	236.9
MOH and QL Expenditure on Health as a % of GDP	2.4%	-
Household OOP Expenditure on Health (FY 2014)	10.8 billion	347.9 million
Estimated Total Health Expenditure (public and private)*	21.8 billion	598.2 million
Per Capita Total Expenditure on Health (public and private)	17,262	473.7
Catastrophic Expenditure on Health (2015)	3.6%	-

Source: Budget 2016/17, 2015 Survey Report on Household OOP Expenditure on Health

* *Private health expenditure for FY 2016/17 has been calculated from estimates indicated in the 2015 Survey Report on Household OOP Expenditure on Health*

1.2.3 For FY 2016/17, Ministry of Health and Quality of Life Expenditure on Health amounts to Rs 10.9 billion or US $299.1 million, representing some 2.4% of Gross Domestic Product (GDP)

and 7.7% of Total Government Expenditure (TGE). Per capita public expenditure on health is Rs 8,631 or US$ 236.9.

1.3 National Health System

1.3.1 The World Health Organization (WHO) ranks the national health system of Mauritius 84th out of 191 countries. In terms of responsiveness, the national health system is rated amongst the highest achieving group of countries, ranking 56th, with an index of 5.57.

1.3.2 State-owned health institutions, both hospitals and primary health care facilities, remain the main providers of health care services to the population. In 2015, approximately 72.8% of the population attended State-Owned health care delivery institutions for outpatient and inpatient services, while 27.2% of the population sought out care and treatment from private health care providers.

1.3.3 In 2015, the Primary Health Care (PHC) network in the country comprises 18 Area Health Centres, 116 Community Health Centres, 5 Medi-clinics, 2 Community Hospitals and other satellite PHC institutions. In 2015, 4,683,348 attendances were recorded at the primary health care institutions. Vaccination coverage among babies (0-1 year), against tuberculosis, diphtheria, whooping cough, tetanus, poliomyelitis, Haemophilus influenzae type b, measles, mumps and rubella was around 88% in the public health service, and is practically 100% for the whole country.

1.3.4 Secondary and specialized health care services in the public sector are delivered through two hospitals at the district level, five Regional Hospitals, one ophthalmology hospital, one ear/nose/throat hospital, one mental health care institution, one chest hospital and a cardiac centre. Total bed capacity of these hospitals was 3,596 in 2015. A list of the major services provided by the secondary and tertiary health care institutions is given in **TABLE IV.**

TABLE IV: Curative and Tertiary Services

▪ Accident & Emergency	▪ Plastic Surgery
▪ General Medicine	▪ Psychology & Psychiatry
▪ Paediatrics	▪ Rheumatology
▪ General Surgery	▪ Paediatric Surgery
▪ Orthopaedics	▪ Cardiology/Cardiac Surgery
▪ Gynaecology and obstetrics	▪ Diabetes/Endocrinology
▪ Anaesthesia	▪ Imaging facilities including CT Scan and MRI
▪ Dermatology	▪ Diagnostic Laboratory Investigations
▪ Intensive Care Services	▪ Social Care Services including therapy
▪ Nephrology	▪ Oral and Maxillofacial surgery

▪ Gastro-enterology	▪ Oncology and Radiotherapy
▪ Ophthalmology	▪ Infectious Diseases management
▪ Otolaryngology	▪ Respiratory Medicine

1.3.5 In 2015, the number of admissions in the regional hospitals and the two district hospitals was 184,666 and the number of operations performed was 34,469. During the same year, these hospitals also recorded 2,556,221 outpatient cases, out of which there were 1,027,879 cases at Accident and Emergency Departments.

1.3.6 The number of outpatient attendances at the Subramania Bharati Eye Hospital (SBEH), the Ear/Nose/Throat Centre, Brown Sequard Mental Care Centre, Poudre d'Or Hospital/Chest Clinic and Cardiac Centre was 474,581 in 2015. In-patient admissions to these institutions were 23,575 during the same year. In 2015, the Cardiac Centre performed a total of 1,583 operations, including 921 cardiac surgeries and 120 vascular surgeries.

1.3.7 Support services which include laboratory and imaging services, play an integral part of the statutory responsibilities of the Ministry of Health and Quality of Life to provide efficient, quality and cost- effective health services.

1.3.8 The Central Health Laboratory (CHL) is an essential component of the national health system. Its mission is to provide effective high quality diagnostic services responsive to the needs of patients, physicians and other users. CHL acts as a diagnostic and referral Public Health laboratory. It also caters to some of the needs of the private medical sector on a fee-for-service basis.

1.3.9 The CHL undertakes tests in the field of biochemistry, haematology, bacteriology, parasitology, virology and molecular biology, histopathology, cytopathology and blood transfusion services. In 2015, 10,417,716 pathological tests were carried out in the Republic of Mauritius.

1.3.10 The National Blood Transfusion Service (NBTS) caters for the need of blood and blood components for all public and private health care institutions in the country. In 2015, 46,167 pints of blood were collected with the assistance of the Civil Society, the Blood Donors Association, the Association of Blood Donation Organizers and other NGOs.

1.3.11 Imaging diagnostics comprise a variety of services that make use of imaging technology, such as x-rays and radiation for the diagnosis and monitoring of patients. In 2015, a total of 15,229 CT scans and 3,872 MRI were carried out in the five regional hospitals in the Island of Mauritius.

1.3.12 The Service d'Aide Medicale d'Urgence (SAMU) was set up in December 1997 with the support of the French Government and with the collaboration of the Commission de

l'Ocean Indien. There is a SAMU unit at each of the five Regional Hospitals, with a fleet of 15 ambulances equipped with high-tech equipment. In 2015, 34,287 calls were received, out of which a total number of 10,998 cases were attended by the SAMU Team. These calls are sorted into non-emergencies, emergencies and acute emergencies.

1.4 Private Health Sector

1.4.1 Secondary and tertiary services are provided through 17 private hospitals with a bed capacity of 647. Besides, there were 20 private medical laboratories and 328 private pharmacies in 2015.

1.4.2 The private health sector employs around 2,000 employees. In 2015, some 1,439 doctors worked exclusively in the private sector. Besides, 322 dentists and 470 pharmacists practiced in the sector.

1.4.3 In 2015, the private hospitals catered for some 238,279 patients, undertook around 24,565 surgical operations and also managed around 3,270 birth deliveries, representing 26.9% of all births in 2015.

1.5 Human Resources for Health

1.5.1 The national health workforce is estimated at 15,000 in 2015, out of whom, the public health sector employed approximately 13,000 and the remaining 2,000 offered their services in the private sector.

1.5.2 In 2015, there were 2,550 doctors in the country, out of whom 1,111, including 301 specialists were working in the public sector. The number of doctors per 10,000 population was 20.2 in 2015.

1.5.3 Out of the total number of 380 dentists, 58 were employed by the State and 322 were working in the private sector. The number of dentists per 10,000 population stood at 3.0 in 2015.

1.5.4 497 pharmacists were registered in 2015, out of whom only 27 were working in the public health institutions and 470 were practicing in the private sector. The number of pharmacists per 10,000 population was 3.9.

1.5.5 Qualified nurses and midwives working in the public sector in 2015 numbered 3,261, out of the total number of 4,261 nurses in the country. Other paramedical personnel in the public sector included 1,712 Attendants (Hospital Services), 982 Health Care Assistants (General), 221 Medical Laboratory Technologists, 230 Pharmacy Technicians (including Store Manager) and 383 Health Records personnel.

1.6 Legislation

1.6.1 **TABLE V** indicates various legislations governing the health sector with their respective functions.

TABLE V: Legislations and Functions

LEGISLATION	FUNCTIONS RELATING TO EACH LEGISLATION
Public Health Act 1925	To regulate practices for the prevention of morbidity and mortality due to communicable diseases and for ensuring an environment free of health hazards
The Food Act 1998	To provide for the modernization and consolidation of the law relating to the quality of food
The Medical Council Act 1999	To regulate the practice of medicine
Dental Council Act 1999	To regulate the practice of dentistry
The Nursing Council Act 2003	To regulate and control the nursing and midwifery professions
Pharmacy Act 1983	To regulate the manufacture, import and sale of pharmaceutical products
Quarantine Act 1954	To provide for measures to prevent spread of infection and other dangers to public health from ships or aircraft or persons or things on board arriving in Mauritius.
Trust Fund for Specialized Medical Care Act 1992	To regulate the management of Cardiac Centre and other institutions providing high-tech medical care
The Dangerous Drugs Act 2000	To provide for inter alia the control of dangerous drugs, the treatment of addiction and the prevention, detection and repression of drug trafficking.
The Dangerous Chemicals Control Act 2004	To provide for the prevention of damage to health and to the environment caused by dangerous chemicals
Mental Health Care Act 1988	To regulate the management of mental health care services
National Agency for the Treatment and Rehabilitation of Substance Abusers Act 1996	To coordinate and facilitate activities at national level for the prevention of substance abuse and the treatment and rehabilitation of substance abusers
Mauritius Institute of Health Act 1989	To organize training of health professionals and to conduct health systems research.
HIV and AIDS Act 2006	To provide for measures for the control and prevention of the propagation of HIV and AIDS whilst at the same time respect the human rights of persons affected or not with the virus.
Ayurvedic & Other Traditional Medicine Act 1989	To regulate the practice of ayurvedic and traditional medicine
Human Tissue (Removal , Preservation and Transplant) Act 2006	To regulate the removal, preservation and transplant of human tissue, other than blood, under appropriate medical supervision
Mauritius Blood Service Act 2010	To promote blood donation and ensure a safe and adequate supply of blood and blood products.

Opticians (Registration Act) 1962	To regulate the profession of opticians in Mauritius
Private Health Institutions Act 1989	To regulate and license Private Health Institutions.

2. Achievements

2.1 Health Status

2.1.1 Mauritius is performing well on the three health indicators which are commonly used to compare the health status among countries. These indicators are the life expectancy at birth and the infant mortality and maternal mortality rates per thousand live births.

2.1.2 In the last thirty years, life expectancy at birth has increased from 65 years to 74.5 years in 2015. Infant mortality rate per thousand live births is at present 13.6 compared to 18.6 in 1991. Maternal mortality rate which was 0.77 per thousand live births in 1991 has declined to 0.47 in 2015. The incidence of HIV in the population was less than 1% in the population in 2015.

2.1.3 Mauritius has also made important progress in achieving the MDG targets relating to under five mortality rate, maternal mortality ratio and HIV/AIDS. Premature morbidity and mortality associated with infectious, parasitic and water-borne diseases have significantly decreased. Most of these diseases are no longer a matter of critical concern for the country.

2.1.4 The country has also successfully implemented its reproductive health program. In 2015, fertility rate is controlled at 1.36 in the Republic of Mauritius from a high level of 6.0 in the 1960s. The population growth rate between 2014 and 2015 was 0.1%.

2.1.5 These achievements position Mauritius above the level of health performance of upper middle income countries and at the top in the Africa Region. Mauritius is often cited as a reference in the international arena for its remarkable achievements made in improving the health status of its population.

2.1.6 The key health indicators as illustrated in **TABLE VI** point to an enhanced health status of Mauritians.

TABLE VI: Key Health Indicators 2015

Health Indicators 2015	Value
Life Expectancy at Birth (Male)	71.2 years
Life Expectancy at Birth (Female)	77.8 years
Infant Mortality Rate (per 1000 live births)	13.6
Maternal Mortality Ratio (per 1000 live births)	0.47
Under-Five Mortality Rate (per 1000 live births)	15.5
Immunization Coverage (Public and Private sectors)	100%
Prevalence Rate of HIV infection	<1%

Prevalence of Type 2 Diabetes (20-74 years)	20.5%
Burden of Non Communicable Diseases	80%

Source: Health Statistic Report 2015 and NCD Survey 2015

2.1.7 Mortality from infectious, parasitic and water-borne diseases has dramatically decreased from the late sixties - a decrease from 7% in 1976 to 2.3% in 2015, except for the year 2006, during which the country witnessed an outbreak of chikungunya. AH1N influenza which was a world pandemic in 2009 was also successfully controlled. Most vaccine preventable diseases, water borne diseases and other communicable diseases are no longer a matter of critical concern for Mauritius.

2.1.8 The last case of poliomyelitis was notified in 1965. Certification of Mauritius as a polio free zone is underway. Over the last thirty years, no case of neonatal tetanus was notified and only five cases of whooping cough were recorded since 1990. Other communicable diseases such as measles, mumps, rubella and tuberculosis are under control. These achievements are attributed to the successful implementation of an integrated package of primary health care services, including amongst others the expanded programme of immunization, maternal and child care services, preventive medicine and health promotion activities which are provided free to every citizen of the country.

2.1.9 The first case of HIV and AIDS was reported in Mauritius in the year 1987. As at the end of 2015, a total of 6,593 cases of HIV/AIDS were detected, of whom 6,352 (4,871 males, 1,481 females) were Mauritians. 73.4% of the 6,352 HIV infected Mauritians were in the age-group 25 to 49 years and 17.7% in the age-group 15 to 24 years. The number of newly detected HIV/AIDS cases among Mauritians was 262 in 2015 compared to 322 in 2014 and 568 in 2010. The prevalence of HIV infection was less than 1% in the population in 2015.

2.1.10 The epidemic of HIV and AIDS is said to be 'concentrated', with a prevalence rate of more than 5% among the most at risk population. Initially, the main mode of HIV transmission was heterosexual, accounting for around 70% of all cases. The rising incidence as from year 2000 was driven by Injecting Drug Users (IDUs) acting as the main mode of transmission.

2.1.11 It is estimated that HIV prevalence is between 20 and 30 per cent among vulnerable groups such as prison inmates, intravenous drug users (IDUs) and commercial sex workers. Since 2000, there has been a shift in the mode of transmission. In 2003, 68% of new cases were noted among injecting drug users and this figure reached 92% in 2005, and has gradually decreased since then to 34.7% in 2015 following the introduction of Harm Reduction Strategies.

2.2 Achievements of the Millennium Development Goals

2.2.1 The United Nations Millennium Declaration, endorsed in September 2000, committed world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. Each of the eight Millennium Development Goals (MDGs) which are derived from the UN declaration has a set of targets and indicators to monitor progress from 1990 level to 2015.

2.2.2 The eight MDGs were: eradication of poverty and hunger, achieving universal primary education, promoting gender equality and empowering women, reducing child mortality, improving maternal health, combatting HIV/AIDS, malaria and other diseases, ensuring environmental sustainability, and developing global partnership for development.

2.2.3 Out of the eight MDGs, three were directly related to health. The three health related goals with their respective targets are indicated in **Table VII**.

TABLE VII: Health Related MDGs

UN Health Related Development Goals	Targets
Goal 4 - Reduce child mortality	Reduce by two third, between 1990 and 2015, the Under Five Mortality Rate.
Goal 5 - Improve maternal health	Reduce by three quarters, between 1990 and 2015, the Maternal Mortality Ratio.
Goal 6 - Combat HIV/AIDS, malaria and other diseases	(i) Have halted by 2015 and begun to reverse the spread of HIV/AIDS. (ii) Have halted by 2015 and begun to reverse the incidence of malaria and other diseases.

Source: Millennium Development Goals Report 2015, Republic of Mauritius

2.2.4 Mauritius has been successful in the attainment of most of the MDGs targets including the health related targets. These achievements are mainly attributed to the universal coverage of affordable health care and services, free of any user cost, at the point of use to the population.

2.2.5 The under-five mortality rate (per 1000 live births) has dropped from 23.1 in 1990 to 16.0 in 2014, but the target of 7.7 is not likely to be attained in 2015. The infant mortality rate (per 1000 live births) dropped from 20.4 in 1990 to 14.5 in 2014. The opening of the Neonatal Intensive Care units at Victoria Hospital and SSRN Hospital has contributed to this reduction.

2.2.6 The Maternal Mortality Ratio (MMR, per 100,000 live births) was already very low in

Mauritius in 1990. MMR followed a slightly decreasing trend, from 66 in 1990 to 52 in 2014. Between 2002 and 2005, the MMR ranged between 15 and 21. Almost all deliveries in Mauritius are attended by skilled health personnel, and extensive maternal and health care facilities are available throughout the country.

2.2.7 Intensive sensitization campaigns as from 2006 together with the introduction of harm reduction programmes were instrumental in lowering the rate of prevalence of HIV/AIDS from 0.40 percent in 2006 to 0.18 percent in 2014. On the other hand, the percentage of HIV positive pregnant women receiving antiretroviral treatment to prevent mother to child transmission has improved from 68 percent in 2009 to 97percent in 2014.

2.2.8 As regards other Communicable Diseases (CD), a very effective Communicable Disease Surveillance and Response System is in place to avoid the spread of these diseases in Mauritius. The country is a malaria- free country with few imported cases only and there is no local transmission of the disease (1.6 per 100,000 in 2014). Tuberculosis is already low (10 per 100, 000 in 2014).

2.2.9 Non-Communicable Diseases (NCD) remain a major challenge for Mauritius and constitute almost 80 percent of the disease burden with 85 percent of deaths. Prevention, with special focus on effective education and sensitization of the population for a healthy lifestyle, will remain the core action to address the NCD related challenges.

2.2.10 T

3. Rationale

3.1 In the past few decades, the health care system in Mauritius has been undergoing unprecedented changes with the development and implementation of policies that ensure universal access to health services based on primary care and supported by secondary and tertiary care.

3.2 Many projects have been implemented and the implementation of many more projects are underway. New approaches to service provision have been adopted, new medical technologies provided, additional human resources recruited and new drugs made available. All these investments have contributed significantly to the increase in life expectancy at birth and an enhancement of the quality of life of the people.

3.3 In spite of the remarkable health gains achieved, the national health agenda still remains unaccomplished. This is attributed not only to the evolving nature of medicine, but also to environmental and external factors. The major factors which have put the national health system under pressure are:-

- Demographic Transition
- Health Challenges
- Patients' Expectations

- Medical Technology
- Social Determinants of Health
- Sustainable Development Goals

3.4 Demographic Transition

3.4.1 Mauritius has undergone a rapid demographic transition from high levels of fertility and mortality to lower levels, as a result of which, the country is facing a fast growing population of the elderly. Crude birth rate which was 15.3 in 2004 has declined to 9.9 in 2015.

3.4.2 The population of the Republic of Mauritius currently stands at around 1.3 million. Total fertility rate decreased from 1.83 in 2004 to 1.34 in 2015, while life expectancy at birth has increased to 74.5 years. The low level of fertility, which is below replacement, remains the main factor behind low population growth. Gross reproduction rate which was 0.90 in 2004 continues to decline and stood at 0.64 in 2015.

3.4.3 There has also been significant improvement in the survival of infants over the years. The infant mortality rate has declined to 13.6 in 2015. With the prevailing low population growth rate, it is predicted that Mauritius will begin to depopulate as from 2022.

3.4.4 The demographic changes are accompanied with significant changes in its age structure resulting in an ageing of the population. The proportion of the population aged 0-14 years declined from 20.7% as at mid-2013 to 19.3% in 2015. In contrast, slight increases were registered in the proportion aged 15-64 years from 70.8% to 71.2% in 2015 and the proportion aged 65 years and above from 8.5% to 9.4% during the same period. The overall effect was a decrease in the dependency ratio from 413 to 404.

3.4.5 It is estimated that the proportion of people aged 60 and above will increase from 14.9% in 2015 to 35.1% in 2055. In absolute number, the elderly population will increase from 181,699 in 2015 to 332,455 in 2055, an increase of slightly below threefold. People aged 65 years and above numbered 115,326 in 2015 and represented 9.4% of the total population. By 2055, the number of people aged 65 years and above will more than double to reach 249,973 representing 22% of the total population. It is also estimated that the number of people older than 85 years is likely to triple in the next 30 to 40 years.

TABLE VII: Trend in Age Structure of the Population 2015-2055

Age group	2015		2035		2055	
	Number	%	Number	%	Number	%
Total Population	1,220,663		1,162,149		947,599	
0-14	236,038	19.3	158,880	13.7	102,216	10.8

15-59	802,926	65.8	698,099	60.1	512,938	54.1
60+	181,699	14.9	305,170	26.3	332,445	35.1
60-79	160,030	13.1	262,168	22.6	273,528	28.9
80 and above	21,669	1.8	43,002	3.7	58,917	6.2

3.4.6 **TABLE VII** indicates the trend in age structure of the population for the period 2015 to 2055. According to demographic projections, it is estimated that the proportion of the elderly (60 years and above) will rise sharply to 35.1% by 2055. The most vulnerable segment of the elderly population, that is, those aged 80 years and above, is projected to be 6.2% of the total population.

3.4.7 The above figures show that the growing ageing population will have a dramatic impact on the demand for healthcare services at all levels of care, from primary to specialized health services, including long term continuing care and rehabilitation services. Currently, it is estimated that more than 40 per cent of the public health budget is spent on the elderly aged 60 and over. Taking into consideration the current prevalence of non-communicable diseases, including chronic conditions associated with diabetes, cardiovascular diseases and cancer among the population, including the elderly, it is strongly presumed that demand for health care services will scale up radically in the years to come.

3.4.8 The 65 years and older population currently accounts for more than 40% of occupied bed days in the public health institutions. With the current trend of occupied bed days, it is obvious that, by 2050, the five regional hospitals and other specialized hospitals will not be able to cater for the increasing demand of services by the elderly.

3.5 Health Challenges

3.5.1 An increase in life expectancy has not resulted in an increase in the life years with good quality of life for many Mauritians, including a large proportion of the elderly, who are afflicted with one or several of the complications of the Non-communicable diseases (NCDs).

3.5.2 The health gains of the past few decades are being undermined by the dramatic rise of Non-Communicable Diseases (NCDs) in the country. Amongst the prominent NCDs affecting the population are diabetes, cardiovascular diseases and cancer. The rise of these diseases and the chronic conditions associated with them is responsible for the largest share of morbidity, mortality and disability and presents a major challenge to the health of the nation and to the health system at large. The share of NCDs as a percentage of total morbidity was 80.0% in 2015.

3.5.3 The Mauritius Non-communicable Disease Survey 2015 estimates that there are some 257,442 people between the ages of 25 and 74 years with diabetes in the country. People with diabetes, hypertension and elevated cholesterol remain potential candidates for cardiovascular diseases, strokes, kidney diseases, amputations and other chronic complications.

3.5.4 The NCD Survey 2015 also provides evidence-based information on the prevalence of hypertension, estimated at 28.4% - 27.0% for women and 30.3% for men and the prevalence of elevated total cholesterol (≥5.2 mmol/l) estimated at 44.1% - 41.8% for women and 47.1% for men.

3.5.5 In 2013, a total of 2,107 new cases of cancer were registered - 1,244 cases females and 863 males. Cancer was the cause of the death of 1,203 persons in 2013, bringing the percentage of mortality caused by the disease to 12.9% of all deaths in that year. 31.8% of mortality in 2014 was due to cardiovascular diseases compared to 35.8% in 2000.

3.6 Patients' Expectations

3.6.1 With a very high level of literacy rate in Mauritius and expanding communication and information technologies, people are well informed about their rights in health matters. Patients are rightly expecting more from health care providers in terms of quality of service, state-of-the art equipment, new drug therapies, a pleasant, safe and hygienic environment, excellent hotel facilities and timely clinical interventions.

3.6.2 Besides, they are on the alert in identifying and complaining about perceived negligence and inadequate performance on the part of health care providers. Health consumerism is high on the personal agenda of the population. People want a value for money service given that free health care services in the public sector are funded through taxation.

3.7 Medical Technology

3.7.1 Medical devices, including medical equipment and other health technologies, are critical to the delivery of health care services. These devices are imperative to save lives, improve health and quality of life, and are indispensable for the prevention, diagnosis, treatment, and management of all medical conditions, diseases, illnesses, and disabilities.

3.7.2 Advances in medicine and science continue their impressive march forward.Technology breakthroughs in medicine have proved their potential for improving quality of life and increasing life expectancy. There are new sophisticated medical technologies, new vaccines and new generations of drugs in the market, which are always expensive to acquire. Many of these latest medical devices are expensive in terms of their acquisition and maintenance.

To further enhance the quality of care, major investment in capital equipment will have to be made during the next five years.

3.8 Social Determinants of Health

3.8.1 The bulk of the burden of diseases and the major causes of health inequities arise from the conditions in which people are born, grow, live, work and age. These conditions are referred to as social determinants of health- a term used to encompass the social, economic, political, cultural, and environmental factors that impact on health.

3.8.2 In Mauritius, inequities by socioeconomic status may exist in NCD risks, especially by level of education, type of occupation, income and ethnicity. However, the most important socioeconomic factor associated with NCDs is the level of education which shows significant risks for hypertension, diabetes, and metabolic syndrome for the least educated. Individuals with low levels of education have higher risks of NCDs and their related risk factors. In particular, higher levels of education are associated with lower likelihood of being overweight or obese but the most educated do exhibit other risk factors including smoking, sedentary lifestyles, and alcohol consumption. Thus higher levels of education are most likely associated with healthier diets.

3.9 Sustainable Development Goals

3.9.1 Sustainable Development Goal 3 is related to health and requires that we 'ensure healthy lives and promote well-being for all at all ages'.

3.9.2 The main targets to be met for Sustainable Development Goal 3 are:

- maternal mortality ratio to be less than 70 per 100,000 live births,
- under-5 mortality to be at least as low as 25 per 1000 live births,
- to end the epidemic of AIDS, tuberculosis, malaria and neglected tropical diseases,
- to reduce by one third premature mortality from non-communicable diseases,
- to strengthen the prevention and treatment of substance abuse,
- to ensure universal health coverage, including financial risk protection,
- access to quality essential health-care services, and
- access to safe, effective, quality and affordable essential medicines and vaccines for all.

4. Key Principles Underlying Health Sector Strategy 2017-2021

4.1 The Health Sector Strategy 2013-2017 builds on the lessons and experiences learnt since 1968 in the provision of free health services to the population through the implementation of various policy actions and strategies. The Strategy not only reflects the expectations and aspirations of the population for improved and state-of-the-art services and a quality of care similar to that of other upper middle income countries, but also paves the way for the health sector to be more proactive in the economic development of Mauritius.

4.2 The following set of eight fundamental principles underpins the Health Sector Strategy 2017-2021:-

PRINCIPLE 1:- HEALTH IS A HUMAN RIGHT

The Universal Declaration of Human Rights stipulates that health is a human right. The World Health Organization (WHO) affirms that, to quote,

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, and that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race,

religion and political beliefs, economic or social condition. Enjoyment of this right is vital to all other aspects of a person's life and is crucial to the realization of many other rights". End of quotation.

In line with the abovementioned declaration and statement, the Government of the Republic of Mauritius ensures universal coverage of health care in the country, through the provision of free health services to every citizen, irrespective of race, religion and gender.

PRINCIPLE 2:- GOOD HEALTH IS AMONGST THE PRIORITY NEEDS OF THE POPULATION

The anguish of morbidity, disability and pre-mature mortality which is a matter of great concern to the population makes disease prevention and control a central preoccupation of the people and policy-makers in the country. While acknowledging the findings of the Global Survey commissioned for the Millennium Summit of the United Nations (Millennium Poll, United Nations 2000), one of which is that good health consistently ranked as the number one desire of men and women around the world, Government in Mauritius recognizes that good health is one among the basic capabilities that gives value to human life and therefore places health at the core of its socio-economic agenda.

PRINCIPLE 3:- HEALTH IS WEALTH

The wisdom of every culture teaches that 'health is wealth'. Good health is essential for work productivity and the capability to grow intellectually, physically and emotionally. For individuals and families, good health is a pre-requisite for personal development and economic security. Good health guarantees the economic well-being of the individual and remains the key factor for improved quality of life and higher standards of living. Healthier people are more productive and a healthy workforce is crucial for macro-economic development. Studies undertaken by the World Bank and the World Health Organization have established the direct relationship between sustainable investment in health and increase in Gross Domestic Product (GDP).

PRINCIPLE 4:- MAINTAINING THE WELFARE VALUES OF FREE HEALTH SERVICES

Health is the cornerstone of the welfare values of Government. The State recognizes that health care should be provided according to need and not ability to pay. The State continues to sustain the provision of health care services, free of any user cost, at the point of use to the population and to perform the triple roles of financing source, financing agent and provider of both clinical and non-clinical interventions in the public health sector. The financing component of the Strategy is based on the related value of solidarity.

PRINCIPLE 5:- SHARED VALUES AMONG ALL STAKEHOLDERS

The Health Sector Strategy 2013-2017 embraces shared values among all health care stakeholders including the private sector institutions and the civil society. The overarching

values are universality, provision of high quality care, equity in health delivery, patients' safety and patients' rights.

PRINCIPLE 6:- VALUE FOR MONEY SERVICE

Public health care spending represents an average of 8.8 per cent of total government spending and 2.7 per cent of the Gross Domestic Product. This significant amount is people's money raised through fiscal policies, including direct and indirect taxes. As such patients seeking care and treatment in the public sector rightly expect a value for money service.

PRINCIPLE 7:- COMMUNITY BASED APPROACH

Population health is an approach that aims at improving the health and well-being of people through community involvement in health matters. Community participation in the decision-making, planning and implementation processes related to the delivery of services is sine qua non for the implementation of the strategy.

PRINCIPLE 8:- PATIENTS' EXPECTATIONS

Patients rightly expect more from public health care providers in terms of timely clinical interventions, state-of-the-art services, new drug therapies and a personalized care in a friendly, pleasant, safe and clean environment. Actions proposed in the Health Sector Strategy 2017-2021 lay the basis to further enhance the quality of health care services in response to patients' growing expectations.

5. OBJECTIVES

5.1 Main Objective

The main objective of the Health Sector Strategy for the period 2017-2021 is to ensure the enhancement of health sector development in the Republic of Mauritius, including Rodrigues and the Outer Islands, in order to attain positive health outcomes for the individual, the family, the community and the economy at large.

5.2 Specific Objectives

Specific objectives of the Health Sector Strategy 2017-2021 are, *inter-alia,* the following:-

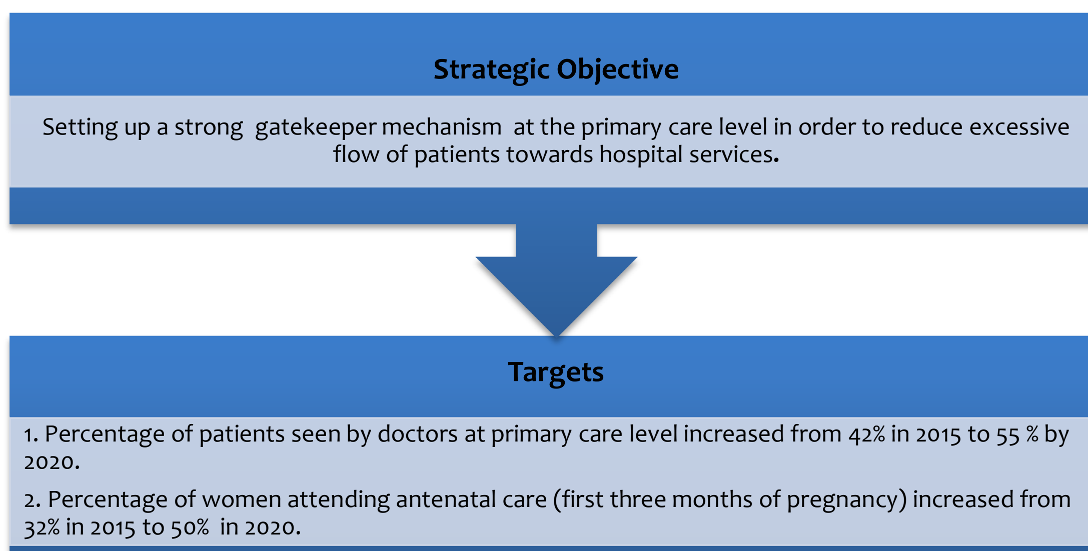
- effectively managing and supporting the patient journey to, through and from the public health institutions;
- identifying and responding to the health needs of the population;
- providing value for money and a high quality service to health consumers;
- making primary health care the lynchpin of the national health system;
- providing a comprehensive range of secondary and tertiary care services benchmarked to international standards;

- facilitating the development of the medical and knowledge hub, including health tourism;
- providing a conducive environment for teaching and training of all categories of health professionals;
- developing research for evidence-based policy making and;
- strengthening public private partnership.

5.3. Key Targets For 2020

- Increase in life expectancy at birth of the population from 74.5 years in 2015 to 77 years in 2020.
- Reduction in infant mortality rate from 13.6 in 2015 to 11 *per 1,000 live births* in 2020.
- Reduction in under five mortality rate from 15.5 in 2015 to 11 *per 1,000 live births* in 2020.
- Reduction in maternal mortality ratio from 0.47 in 2015 to 0.29 *per 1,000 live births* in 2020.
- New cases of HIV/AIDS by 2020 tending towards zero.
- A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases by 2020.

5. Primary Health Care



Primary health care is the first level of contact of individuals, the family and the community with the national health system. It brings health care as close as possible to where people live and work and constitutes the first element of the continuing health care process. Universal

access to an efficient and effective primary health care service prevents people with minor complaints from flooding the emergency wards of hospitals.

5.1 Situational Analysis

5.1.1 Mauritius provides universal access to primary care services, free of any user cost, to all its citizens. A cohesive and functioning primary health care (PHC) system is in place to ensure timely and appropriate services to the population.

5.1.2 As the frontline entry point to the national health system, primary health care institutions act as "gatekeepers" for patients' access to hospitals. This gatekeeper mechanism which places primary care at the centre of the health system, effectively ensures that all patients, if needs arise, have timely access to the services of a doctor and other health professionals.

5.1.3 In 2015, PHC services were provided through a network of 18 Area Health Centres, 116 Community Health Centres, 5 Medi-Clinics, 2 Community Hospitals and other satellite PHC institutions. For approximately every 8,956 inhabitants, there is one PHC delivery point which is located within a radius of three miles of the residences of people. Additionally, mobile clinics provide health services in schools, at worksites and in outreach regions.

5.1.4 **TABLE VIII** gives an indication of the package of PHC services delivered to the community in Mauritius.

TABLE VIII: Package of Primary Health Care Services

▪ Diagnosis and Treatment of Common Diseases and Injuries	▪ Immunization
▪ Referral to & Follow up from hospitals	▪ School Health Services
▪ Diabetes Clinics	▪ Health Promotion and Education
▪ Antenatal Clinics	▪ Surveillance of Communicable Diseases
▪ Well Baby Clinics	▪ Environmental & Occupational Health
▪ Specialist Sessions & X-Ray Facilities	▪ Family Planning & Reproductive Health Services
▪ Dental Clinics	▪ Post Natal Clinics

5.1.5 In 2015, 4,683,348 attendances were recorded at the 141 primary health care institutions for the treatment of common diseases and minor injuries. Around 42% of patients attending public health institutions were seen by doctors at primary health care centres.

5.1.6 TABLE IX gives an indication of the total number of attendances recorded in all the PHC institutions at the level of the five Health Regions in 2015.

TABLE IX: Attendances at PHC Institutions, 2015

DISTRICTS	ATTENDANCES
Health Region 1	1,122,465
Health Region 2	1,198,988
Health Region 3	827,627
Health Region 4	593,825
Health Region 5	940,443
TOTAL	**4,683,348**

5.1.7 Maternal Child Health (MCH) services, including ante-natal care and post-natal care have been strengthened. Exclusive breastfeeding for the first six months and continued breastfeeding for two years and beyond are being promoted. The implementation of the Expanded Programme of Immunization (EPI) has been sustained since independence in 1968. Taking into account immunization undertaken in both the public and private sectors, immunization coverage in the country is almost 100%.

5.1.8 The National Sexual and Reproductive Health Strategy and Plan of Action 2009-2015 have been implemented and activities carried out include sensitization and awareness campaigns on subjects related to sexual and reproductive health. Monthly bulletins on reproductive health services and a demographic yearbook are published on a regular basis to guide the planning process and the formulation of policies.

5.1.9 Health education programs in schools contribute to the protection and promotion of the health of children with a view to preventing health problems later in lives. The Ministry of Health and Quality of Life sustains the implementation of a comprehensive quality school health program in pre-primary, primary and secondary schools to prevent morbidity, premature mortality and disability due to both communicable and non-communicable diseases.

5.1.10 In 2015, in the island of Mauritius, 525 pre-primary schools were visited and 15,732 children were screened for common illnesses and dental carries. During the same year, visits were undertaken at 312 primary schools and 47,500 students were screened. **TABLE X** gives an indication of the activities undertaken at the level of primary schools in 2015.

TABLE X: Summary on Primary School Health Activity, 2015

ACTIVITY AND RESULT	ISLAND OF MAURITIUS

Screening By Nursing Staff	
No. of schools visited	312
No. of children screened	47,500
Scabies	34
Nits and lice	3,463
Dental problems	10,110
No. of children referred to dentist	6,978
Vision Survey (Std III,V and VI)	
No. of children screened	27,529
No. with defective vision	1,302
No. referred to specialists	1,130
Immunizations Performed	
D.T - POLIO (New entrants)	12,129
MMR (New entrants)	11,955
Tetanus Toxoid (School leavers)	15,186

5.1.11 Dental services provided at the primary care level, include a range of preventive, counselling, conservative and emergency treatment. In the island of Mauritius, routine dental care is provided in the public service though 59 dental clinics. There are 31 dental clinics (including 3 mobile clinics) at the PHC level. The dental clinics (static and mobile) recorded 312,612 attendances in 2015 for routine dental care, out of which 211,961 (67.8%) were seen at PHC centres. In 2015, 32,362 persons were sensitized on oral health promotion in the community and schools.

5.1.12 Sustainable investment in PHC over the past few decades has paid rewarding dividends and has contributed significantly in improving the overall health status of the population. Life expectancy at birth for male has significantly increased from 61.0 years in 1972 to 71.2 years in 2015 and that for female has improved from 65 years to 77.8 years during the same time period. Average life expectancy for Mauritians is, at present, 74.5.

5.1.13 Infant mortality rate per thousand live births which was 45.6 in 1974 has improved to 13.6 in 2015. Maternal Mortality Ratio per thousand live births also improved from 1.3 in 1974 to 0.47 in 2015.

5.1.14 Mauritius has attained universal health coverage for primary care services. Accessibility and coverage of primary care services is currently high. 98% of pregnant women have four antenatal care visits compared with the global average of 55%. Nearly 100% of deliveries are attended by skilled attendants compared with the global average of 70%.

5.2 Constraints and Challenges

5.2.1 Mauritius is faced with growing health challenges, which include the increasing burden of NCDs and related complications. In addition, the emergence of new infectious diseases, the resurgence of vector-borne diseases and the special health needs of the ageing population are challenging the remarkable health gains already accomplished.

5.2.2 Nearly forty per cent of the State-owned infrastructures providing PHC services are inappropriate and do not allow for further expansion. This situation results in more patients attending hospitals, leading to overcrowding in the Accident/Emergency Departments.

5.2.3 The infrastructure, the organization and monitoring of service delivery and the quality of care provided at the primary care level need to be modernized to keep pace with the requirements and expectations of the population.

5.2.4 A Master Plan for PHC Services has been developed. This Plan comprises an audit of existing services and lays out a comprehensive strategy for the modernization of infrastructure, the expansion of the human resource base and the further strengthening of primary health care services.

5.3 Primary Health Care Strategic Actions

5.3.1 Strategic Actions for the period 2017-2021 which are based on the recommendations of the Master Plan Primary Health Care Services are indicated in **Box 1**.

Box 1

STRATEGIC ACTIONS

1. Implementation of the Master Plan for Primary Health Care, which, *inter-alia*, includes the following projects:
   - Recruitment of and capacity building of medical officers and allied staff for the phased implementation of the Primary Care Physician Project (Family Doctor Service).
   - Phased upgrading and modernization of primary health care centres.
   - Construction of medi-clinics in strategic areas.
   - Review and upgrading of the existing package of primary health care services with emphasis on dental care, care for the elderly, palliative care, nurse domiciliary visits, community based rehabilitation and community psychiatric services.
   - Upgrading of diagnostic facilities in all primary care institutions.
2. Implementation of E-Health plan at primary health care level

6. Public Health

Strategic Objective

Strengthening programmes related to the prevention and control of communicable diseases as well as the promotion of environmental and occupational health and food safety and responding effectively to the impact of climate change on health.

Targets

1. A 100% implementation of all measures for the prevention and control of major epidemics.
2. Response actions to disease outbreaks initiated within 48 hours increased by 50% in 2020.
3. 50% of foodhandlers sensitized on the practice of Hazard Analysis & Critical Control Point by 2020.

Public health, in its broader perspective, aims at protecting and improving the health of the population through preventive medicine, health education, control of communicable and non - communicable diseases, application of sanitary measures and monitoring of environmental hazards, while at the same time ensuring emergency preparedness and response.

6.1 Situational Analysis

6.1.1 In Mauritius, public health activities are mainly carried out by the Ministry of Health and Quality of Life. Other stakeholders include local government authorities, other ministries, the local community, the private sector, non–governmental organisations and other partners.

6.1.2 The prevention and control of communicable diseases programme is coordinated by a reinforced Communicable Disease Control Unit, which is supported by an epidemiologist, and which, amongst others, has enabled the establishment of an early warning and response system.

6.1.3 In line with the WHO guidelines, an Emergency Preparedness and Response Framework, to cater for emergencies in case of mass casualties in times of epidemics or other infectious diseases, has been developed. A Stratified Emergency Response Plan to manage cases in times of epidemics or other infectious diseases has also been developed and is being implemented.

6.1.4 Public health services are provided through regional health offices and offices located at the airport and the port. Public health officers are responsible for the surveillance of communicable diseases, for reducing risks from vector-borne, food, and water-borne diseases and for the prevention and control of communicable diseases.

6.1.5 Public health services also deal with environmental and other health hazards. These include food contamination, water and soil contamination, disease vectors, noise and odour pollution and occupational hazards. In addition, control of the use of chemicals is ensured by the Dangerous Chemicals Control Board.

6.1.6 The Quarantine Act and its Regulations is enforced by the Port and Airport Health Officers with a view to preventing the spread of communicable diseases, including the emergence of new diseases and resurgence of diseases of the past.

6.1.7 Mauritius has demonstrated its capacity in eliminating vector-borne and other communicable diseases such as malaria, whooping cough, diphtheria, leprosy, schistosomiasis, poliomyelitis and other communicable diseases.

6.1.8 Two new vaccines have been introduced in 2015 namely, Rotavirus Vaccine and Pneumococcal Vaccine in the Expanded Programme Immunization (EPI) for infants. Also, the Human Papilloma Virus Vaccine is being offered to primary school girls from 9 years of age and above as from August 2016.

6.1.9 Since the past few years, the country has not recorded any single indigenous case of malaria, despite continued presence of the vector, 'the anopheles' mosquito. The success in controlling communicable diseases is attributed to the implementation of an efficient surveillance programme as well as the National Expanded Programme of Immunization.

6.1.10 In addition, with a view to preventing the introduction of communicable diseases of major public health importance, surveillance at the ports of entry and at residence is being carried out for passengers arriving from high risk areas. **TABLE XI** below indicates surveillance activities performed in 2015.

TABLE XI: Cases Attended by Categories, 2015

Disease	No. of passengers visited	Total no. of cases detected (including cases detected at hospital level)
Malaria	329,444	32 (all imported)
Chikungunya	295,909	0
Dengue	365,967	91 (including 83 locally transmitted cases)

6.1.11 Furthermore, vector control is another important pillar of prevention and control of diseases transmitted by mosquitoes. In line with the Integrated Vector Management Strategy, the Vector Biology and Control Division has embarked on a new project with the support of the International Atomic Agency. This project comprises the use of the Sterile Insect Technique for control of mosquito population. This technique consists of disrupting the natural reproductive processes of insects by the use of gamma radiation.

6.1.12 With regard to food safety, the Ministry is implementing a National Plan of Action on Food Safety. Activities carried out in respect to food safety during 2015 are listed in **TABLE XII**.

TABLE XII: The Food Safety Related Activities, 2015

Activities	2015
Number of Food premises inspected	20,388
Prohibition Orders issued	54
Improvement Notices issued	1,971
Contraventions established	285
Number of Cases sentenced	391
Fines inflicted	Rs 649,900

Seizure and destruction of Foodstuff unfit for human consumption	1,623,693 kgs
Number of Pre Market Permits issued	243
Food Samples sent for testing:	
Chemical Analysis	570
Microbiological analysis	997

6.1.13 The Ministry of Health and Quality of Life remains the enforcing agency for safe drinking water, noise and odour pollution under the Environment Protection (Amendment 2008) Act. Monitoring as well as enforcement pertaining to same is undertaken by the Environmental Health Engineering Unit (EHEU) of the Ministry. **TABLE XIII** lists down the activities of the EHEU in 2015.

TABLE XIII: List of Activities of EHEU, 2015

Activities	2015
Morcellement applications processed	501
PER/EIA applications	57
Government projects processed	34
Odour and other complaints attended to	462
Number of water samples collected	5,498
Visits to wastewater treatment plants	397
Visits to water treatment plants	304
Visits to SMEs/Industries/Hotels/Night clubs/ Restaurants	1,479
Swimming pool water monitoring visits	321
Noise complaints attended to	777
Noise monitoring visits	1,588

6.1.14 The Ministry of Health and Quality of Life is providing, through the Occupational Health Unit (OHU), services to specific groups of workers including medical surveillance for civil servants.

6.1.15 In addition, the Unit issues health clearance to migrant workers and also regulates the import and use of dangerous chemicals in the country. **TABLE XIV** below indicates activities conducted by the OHU in 2015.

TABLE XIV: List of Activities of the Occupational Health Unit, 2015

Activities	2015
Examination of workers with work related medical problems	10,330
Medical examination for Civil Servants	1,512
Employees assessed for medical fitness in Medical Boards	202
Audiometric, vision, Lung function Tests	228
Health clearances for Migrant Workers	10,850
Evaluation of injured Public Officers by the Injuries Committee	117

Permits issued for import of Agricultural Chemicals	756
Permits issued for import of Industrial Chemicals	278
Permits issued for import of Consumer Chemicals	489
Clearances issued for import of Agricultural Chemicals	769
Clearances issued for import of Industrial Chemicals	8,487
Clearances issued for import of Consumer Chemicals	493
Site visits effected at Industrial Premises, Chemical Storage facilities and other workplaces	101

6.1.16 The Government Analyst Division is the chemical laboratory of the Ministry of Health and Quality of Life. This Division is engaged in performing chemical analysis for various items such as foodstuff, body fluids, medicinal tinctures, drinking water, dangerous chemicals, and pharmaceutical products. **TABLE XV** gives an indication of activities performed by GAD in 2015.

TABLE XV: Activities of the Government Analyst Division, 2015

Activities	2015
Number of samples analyzed	4,580
Number of samples received from Public Health and Food Safety Inspectors	486
Revenue generated	Rs 5,095,650
Number of samples of pharmaceutical products analyzed	85
Number of samples of methadone analyzed	20
Purchase of equipment for newly introduced tests parameters	Nil

6.2 Constraints and Challenges

6.2.1 The country faces the double challenges of communicable and non-communicable diseases. Outbreaks of Chikungunya in the past, recent outbreaks of dengue and AH1N1, HIV and AIDS and imported cases of malaria mean that communicable diseases still remain a threat to the population and the economy.

6.2.2 With changes in lifestyle, food borne diseases have become a major concern in the country. The Ministry of Health and Quality of Life has embarked on the implementation of programmes to ensure food safety, which include surveillance activities and which are carried out in accordance with international standards. Besides, the Ministry of Local Government and Outer Islands, through the municipalities and district councils is also responsible for the enforcement of food safety regulations. 82 cases of food poisoning have been reported in 2015 compares to 169 cases in 2014 and 390 cases in 2013.

6.2.3 Economic development has brought in its wake environmental degradation. Discharge of effluent into water tables, generation of solid wastes and the emission of harmful gases

are some of the environmental hazards responsible for morbidity in the country. To counteract these challenges, the Ministry of Health and Quality of Life, through its Environmental Health Unit plays a key role to monitor noise, investigate odour problems, monitor drinking water quality and give health clearances for specific projects.

6.2.4 Injuries at work place are common and have been well documented in the White Paper for Health Sector Development 2002 and other documents. Occupational health services which include medical examinations, investigations and treatment are provided to the working population at risk. Specialised tests like audiometry, spirometry and vision tests are also undertaken.

6.2.5 Outbreaks of dengue, chikungunya and AH1N1 in the past years and the resurgence of already eradicated communicable diseases, such as Ebola and Zika in other regions of the world, indicate the need for policymakers to adopt and implement pragmatic and comprehensive strategies on a permanent and sustainable basis. Such measures avoid drastic health consequences which are not only detrimental to the health of people, but which inevitably impact on the on-going economic development of the country, including the development of the tourist and services sectors.

6.2.6 Besides, the increased number of food poisoning cases and occupational injuries and growing environmental health risks have become a national concern.

6.3 Public Health Strategic Actions

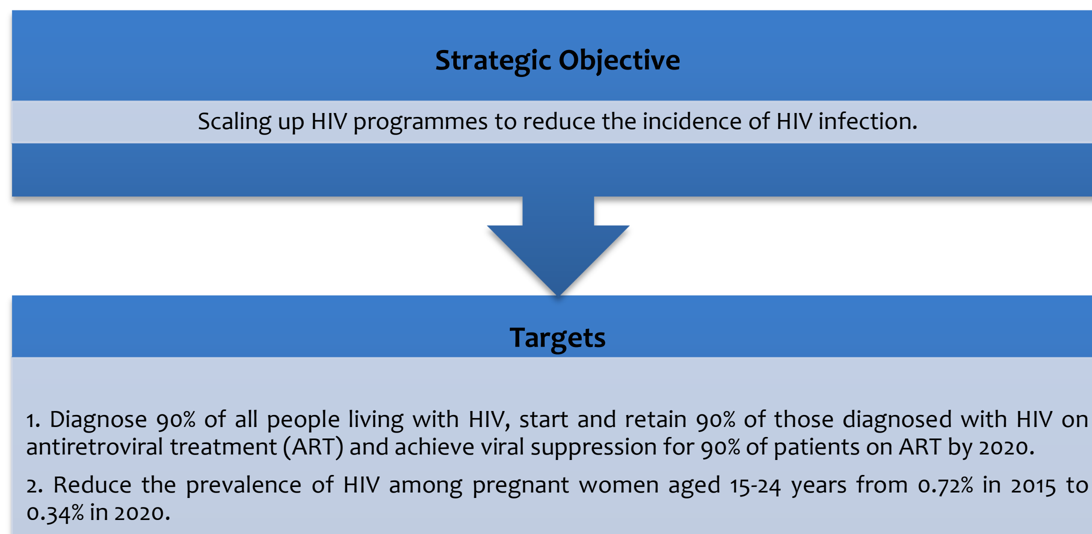
6.3.1 Strategic Actions to further enhance public health activities are indicated in **Box 2.**

Box 2

STRATEGIC ACTIONS

1. Strengthening and sustaining the implementation of the National Programme for the Prevention and Control of Communicable Diseases including emerging and re-emerging communicable diseases such as Zika and the vector borne diseases including the setting up of a negative pressure facility.
2. Putting in place an integrated disease surveillance and response (IDSR) in line with WHO recommendations.
3. Consolidating the national vaccination programme in line with the WHO Global Vaccination Action Plan.
4. Addressing the issue of antimicrobial resistance.
5. Aligning food safety regulatory framework in line with Codex Alimentarius.
6. Consolidating health sector response to climate change within the framework of sustainable development.
7. Formulation and implementation of a National Food Safety Action Plan 2016-2020.

7. HIV and AIDS



Strategic Objective
Scaling up HIV programmes to reduce the incidence of HIV infection.

Targets
1. Diagnose 90% of all people living with HIV, start and retain 90% of those diagnosed with HIV on antiretroviral treatment (ART) and achieve viral suppression for 90% of patients on ART by 2020.
2. Reduce the prevalence of HIV among pregnant women aged 15-24 years from 0.72% in 2015 to 0.34% in 2020.

According to the World Health Organization, more than 70 million people have been infected with the Human Immunodeficiency Virus (HIV) and around 35 million people have died of HIV, since the beginning of the epidemic. Globally, 36.7 million people were living with HIV at the end of 2015. Mauritius has been able to control the spread of HIV infection. In 2015, the

estimated prevalence of HIV infection in the country was 1.02 for population aged 15 years and above.

7.1 Situational Analysis

7.1.1 In Mauritius, the first case of HIV and AIDS was reported in 1987. In 2015, the estimated prevalence of HIV infection among all ages in the country was 0.65% and 0.88% in the age group of 15 to 49 years. At present, it is estimated that some 8,000 persons are living with the HIV in Mauritius. The average monthly number of new HIV cases was 46 during the period 2006-2010 compared to 26 in the period 2011-2015.

7.1.2 In 2015, the prevalence of HIV infection was less than 1%, which indicated a decrease in the incidence of HIV and AIDs. In 2015, 262 new cases of HIV/AIDS were registered with an average of 33 per month compared to 921 cases in 2005 and 568 cases in 2010.

7.1.3 The total number of HIV and AIDS cases registered among Mauritians at end May 2016 was 6,473, of whom 1,531 were female.

7.1.4 The HIV epidemic is a concentrated one in the country and injecting drug use is the major mode of transmission. In 2002, injecting drug use accounted for 14% of all new HIV infections. It increased steadily to reach 92% in 2005. With the introduction of Harm Reduction Strategies in 2006, the percentage of cases detected among injecting drug users gradually decreased to reach 34.7% in 2015. Injecting drug users account for 66.8% of all HIV and AIDS cases detected between 1987 and May 2016, while heterosexuals and Mother to Child Transmission account for 24.7% and 0.9% of HIV/AIDS cases, respectively. 23.5% of HIV cases infected through sexual transmission are in the age group of 15 to 24 years and 35.6% are in the age group of 25 to 34 years. In 2010, among pregnant women, 69 HIV positive cases were detected compared to 84 cases in 2014 and 73 in 2015.

7.1.5 According to data from national surveillance surveys conducted by the National AIDS Secretariat and the Ministry of Health and Quality of Life (Integrated Biological and Behavioural Surveillance Surveys), the prevalence of HIV in key affected populations namely, People Who Inject Drug (PWID), Men Having Sex with Men (MSM) and Female Sex Workers (FSW) was 47.3% (2013), 17.2% (2015) and 15.0% (2015), respectively.

7.1.6 HIV/AIDS is placed high on the socio-economic development agenda of Government. Health services, including prevention services to reduce the prevalence of HIV infection among the population and antiretroviral treatment to People Living with HIV/ AIDS (PLHIV), are provided free of any user cost to patients.

7.1.7 The first Multi-Sectoral HIV and AIDS Strategic Framework was developed for the period 2001 – 2005. The second Multisectoral HIV and AIDS Strategic Framework was

implemented from 2007 – 2011 and the third one from 2012 to 2016. The elaboration of the HIV and AIDS Action Plan for the period 2016 -2021 is under way.

7.1.8 The overall goal of the current HIV and AIDS Action Plan is to prevent new HIV infections, and to provide a continuum of comprehensive care to all PLHIV with the aim of mitigating the impact of the HIV epidemic on individuals, communities and society at large.

7.1.9 The institutional framework which is in line with the Three Ones Principles includes the National AIDS Committee (NAC), a Multi-Sectoral body established to give policy guidance. The National AIDS Secretariat (NAS) was set up in 2006 under the Prime Minister's Office. As from January 2015, the NAS operates directly under the aegis of the Ministry of Health and Quality of Life. The NAC is at present chaired by the Minister of Health and Quality of Life and it comprises other Ministers, representatives of NGOs and the private sector.

7.1.10 The HIV and AIDS Act 2006 provides an effective legal framework to eliminate all forms of discrimination against those inflicted with HIV and AIDS. Health care services, including Voluntary Counselling and Testing (VCT), dispensing of anti-retroviral drugs to PLHIV, induction on methadone, implementation of the Needle Exchange Programme (NEP) and other services related to HIV and AIDS in Mauritius, are provided free to people. People living with HIV and AIDS within the prison settings benefit from the same treatment and care with regard to HIV as those in the community.

7.1.11 The private sector, including Non-Governmental Organisations (NGOs) and religious bodies, support the Government's programme and activities to deal with the HIV/AIDS scourge in the country. Financial support through grants is provided to these bodies on an annual basis.

7.2 Constraints and Challenges

7.2.1 Although it is estimated that some 8,000 persons may be living with HIV, so far only around 5,700 cases have been registered.

7.2.2 Around 80% of detected cases are accessing treatment in Day Care Centres for the Immuno-suppressed. 3,100 of these patients are on antiretroviral (ARV) drugs, out of whom 81% are complying with treatment protocols.

7.2.3 Unprotected sex is still being practised by some people in the high risk group despite awareness sessions for adoption of safe sexual behaviours and provision of condoms at no user cost, among others.

7.2.4 Stigmatisation and discrimination against PLHIV still persist to some extent in society despite the wide and aggressive sensitisation campaigns conducted by Government and NGOs.

7.2.5 The Harm Reduction Strategies were introduced in 2006 to curb the trend of the HIV epidemic. After several years of implementation, with over 6,000 PWIDs induced on the Methadone Substitution Therapy, Government has come forward with a detoxification programme for substance abusers based on Suboxone and Naltrexone.

7.2.6 Synthetic drugs are now an emerging issue with regards to substance abuse, particularly among the youth. An extensive prevention campaign has been launched since April 2016. This campaign is targeting secondary school students and the community as well.

7.2.7 The priorities of Government to deal with the scourge of HIV and AIDS are three-fold:

- to end the epidemic of AIDS by 2030, in line with the health-related Sustainable Development Goal 3. To attain this goal, the UNAIDS 90-90-90 target calls on countries to reach the following goals by 2020:
    - I. 90% of people living with HIV diagnosed,
    - II. 90% of diagnosed people on antiretroviral treatment and
    - III. 90% of people in treatment with fully suppressed viral load.

- detect the maximum number of infected people in order to provide them with antiretroviral therapy; and

- reduce the rate of transmission among injecting drug users through the scaling up of prevention campaigns, the harm reduction services, i.e the Needle Exchange Programme (NEP) and the detoxification programme based on suboxone and naltrexone.

7.2.8 In response to the vision of UNAIDS to achieve major reductions in new HIV infections, HIV-related mortality and the fast track 90-90-90 targets , one of the key recommendations is to initiate ART to all HIV infected individuals, irrespective of their immune status (CD4 count). This is recommended as Test and Treat in the new 2015 WHO Guidelines. Mauritius is considering the adoption and implementation of the WHO 2015 Guidelines. Currently, ART is provided to those with CD4 cell count ≤ 500 cells/mm3 (WHO 2013 Guidelines).

7.3 HIV and AIDS Strategic Actions

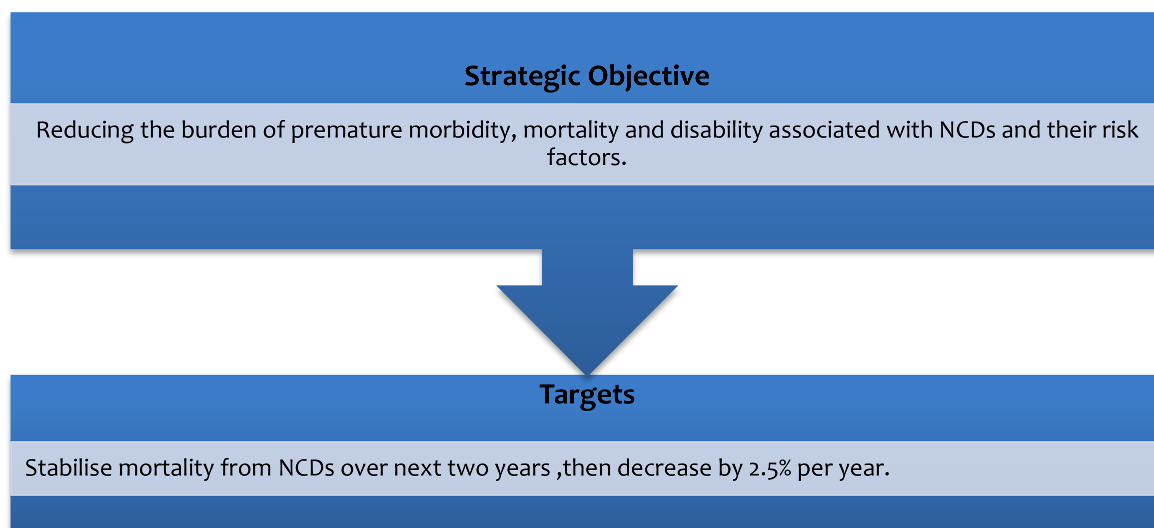
7.3.1 Strategic Actions for HIV and AIDS are illustrated in **Box 3.**

Box 3

STRATEGIC ACTIONS

1. HIV and AIDS Action Plan 2016-2021 to be validated and implemented.
2. Reinforcing sensitization campaigns to achieve positive behavioural change.

8. Non-Communicable Diseases and Health Promotion



The major risk factors of Non-Communicable Diseases are tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol. According to the World Health Organization, if these risk factors are eliminated, at least 80% of all heart diseases, stroke and Type 2 diabetes and over 30% of cancers could be prevented.

8.1 Situational Analysis

8.1.1 Non-communicable Diseases (NCDs) notably cardiovascular diseases, diabetes, cancer and chronic respiratory diseases are responsible for the bulk of morbidity, disability and premature deaths in Mauritius.

8.1.2 The NCD survey 2015 revealed that 23% of the population aged 25-74 years has Type 2 diabetes, 28 % has hypertension and 54% of the population is either overweight or obese.

8.1.3 Another major cause of concern is the increasing incidence of cancer. According to the National Cancer Registry, 2,489 new cases of cancer have been diagnosed in 2015. More than 1,200 deaths due to cancer are reported on an annual basis.

8.1.4 Every year, out of the average of 5 million out-patient cases recorded at the public health institutions, it is estimated that more than 60% are attributable to NCDs.

8.1.5 Mauritius adopted the 2008-2013 Action Plan of the Global Strategy for the Prevention and Control of Non-communicable Diseases developed by the World Health Organization. An International Advisory Committee (IAC) has been set up by Government to advise and oversee the strategy for prevention and control of diabetes, cardiovascular and other related diseases.

8.1.6 A new National Plan of Action on Nutrition 2016-2020 is underway. New strategies have been added to the previous Action Plan following the results of the National Nutrition Survey 2012, the Mauritius Salt Intake Study 2012 and the Mauritius Non-Communicable Diseases Survey 2015. A Sugar Tax on the amount of sugar in all soft drinks has been introduced since 2013. In order to combat the problem of non-communicable diseases and its risk factors, the tax has been extended to all 'sugar-sweetened non-alcoholic beverages'.

8.1.7 An Action Plan on Physical Activity is being implemented. This ambitious multi-sectoral plan will further encourage physical activity across all segments of the population.

8.1.8 The National Action Plan on Tobacco Control which is being implemented is in line with the WHO Framework Convention on Tobacco Control. There is a ban on smoking in public places, on advertising, promotion and sponsorship, and on the sale of cigarettes to minors. It is now mandatory for cigarette packages to display pictorial health warnings. According to data obtained from the Mauritius Revenue Authority, the number of imported cigarette sticks has decreased from 1.1 billion in 2011 to 986 million in 2015.

8.1.9 Screening for NCDs and their risk factors have been strengthened at the community level. Legislations on food, alcohol and tobacco have been reinforced.

8.1.10 The implementation of a National Service Framework for Diabetes (NSFD) is underway. The fourteen standards of the NSFD aim, *inter alia,* to prevent people from getting diabetes, prevent people with diabetes from getting complications and to enable people with complications from diabetes to live as normal a life as possible. A Diabetes and Vascular Health Centre at the Souillac Hospital has been set up. This centre is also responsible to lead capacity building in the management of diabetes care.

8.1.11 The implementation of an Action Plan for Cancer Control is also underway. In addition, there is a major health education media campaign on healthy lifestyles for cancer prevention. Emphasis is also being laid on early detection of cancers. To cope with the increasing number of cancer cases, a new cancer centre is being set up.

8.2 Constraints and Challenges

8.2.1 NCDs impose substantial burden on the national health care system. It is estimated that around 60% of the hospital budget in the public sector is spent on patients suffering from NCDs and their complications. These expenditures are the direct costs incurred by the State to treat patients afflicted by NCDs.

8.2.2 The indirect costs include lost productivity caused by morbidity, disability and premature death, and intangible costs are costs associated with reduced quality of life for people with NCDs. These costs impact heavily on the economy, household and individual. Escalating costs of clinical interventions further impact on the public health bill.

8.2.3 The lack of appropriately trained human resources, such as diabetologists, specialized nurses (diabetes), podiatrists, and primary care physicians trained in chronic disease management is also a major concern.

8.2.4 Prevention of NCDs is driven to a limited extent by the health sector alone. The major challenge is to have effective multi-sectoral actions to address the social determinants of health.

8.2.4 Bringing behavioural changes geared towards healthier lifestyles remains a real challenge.

8.3 Non-Communicable Diseases and Health Promotion Strategic Actions

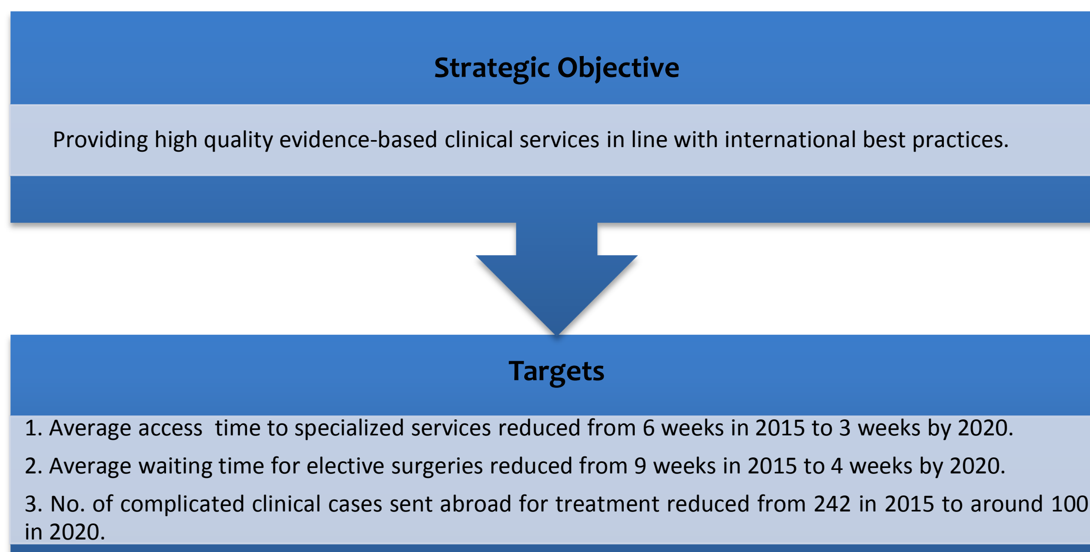
8.3.1 Strategic Actions for non-communicable diseases and health promotion are described in **Box 4.**

Box 4

STRATEGIC ACTIONS

1. Continued implementation of the Strategy on Non-Communicable Diseases and their risk factors in line with the WHO Global Action Plan for Prevention and Control of NCDs.
2. Setting up of a National Multi-sectoral Task Force for NCDs and adopting the "health in all policies" approach for addressing the prevention and control of NCDs.
3. Scaling up the setting up of facilities, such as health clubs, gyms and health tracks, amongst other measures.
4. Develop and implement population based strategies for NCDs such as a National Diabetes Prevention Programme.
5. Implement a National Health Literacy Framework.
6. Sustain the implementation of the new National Action Plan on Tobacco Control (2016-2019) which is in line with the WHO Framework Convention on Tobacco Control.
7. Enhance the Cervical Screening Programme.
8. Develop and implement an Action Plan on Dementia.
9. Revamp the School Health Programme.
10. Sustain the immunization programme against cervical cancer.
11. Strengthen the Health Promotion and Wellness Programme in order to improve the quality of life.
12. Develop a robust NCD Surveillance System.
13. Formulate and implement an Action Plan on Harmful Use of Alcohol.
14. Enhance community participation in health promotion activities, including prevention programmes and intensify mass media campaign on NCDs.
15. Improve the quality of clinical services at the hospital level through infrastructural developments and acquisition of modern medical technology.

9. Hospital Services



Hospitals, in the public sector, provide medical care, including diagnostic, therapeutic and rehabilitative services, as well as out-patient and day care services to patients on a 24/7 basis. They are the main concentration of health resources, professional skills, drugs, infrastructure and medical equipment. Hospital services constitute the largest item of total public health expenditure, representing 83.4% of the annual budget of the Ministry of Health and Quality of Life.

9.1 Situational Analysis

9.1.1 General curative and specialised services in the public sector are delivered by a network of medical institutions, comprising two hospitals at the district level, five regional hospitals, one ophthalmology centre, one ear/nose/throat hospital, one mental health care institution, one chest hospital and a cardiac centre. The total number of hospital beds was 3,596 in 2015. Average bed occupancy rate was 77.0% during the same year.

9.1.2 TABLE XVI below displays the number of available beds and the bed occupancy rate in 2015.

TABLE XVI: Bed Capacity in Public Hospitals, 2015

Public Hospitals	No of Beds	Bed Occupancy Rate
5 Regional Hospitals	2,575	77.7
2 District Hospitals	124	28.3
5 Specialized Health Care Institutions	897	82.3
Total	**3,596**	**77.0**

9.1.3 A list of the major services provided at the level of hospitals and specialized health care centres is illustrated in **TABLE XVII.**

TABLE XVII: Curative and Tertiary Services

▪ Accident & Emergency	▪ Plastic Surgery
▪ General Medicine	▪ Psychology
▪ Paediatrics	▪ Rheumatology
▪ General Surgery	▪ Paediatric Surgery
▪ Orthopaedics	▪ Cardiology/Cardiac Surgery
▪ Gynaecology and obstetrics	▪ Diabetes/Endocrinology
▪ Anaesthesia	▪ Imaging facilities including CT Scan & MRI
▪ Dermatology	▪ Diagnostic Laboratory Investigations
▪ Intensive Care Services	▪ Social Care Services including therapy
▪ Nephrology	▪ Oral and Maxillofacial surgery
▪ Gastro-enterology	▪ Oncology and Radiotherapy
▪ Ophthalmology	▪ Infectious Diseases management
▪ Otolaryngology	▪ Respiratory Medicine
▪ Psychiatry	▪ Renal dialysis and transplantation
▪ Neurosurgery	▪ Ear, nose and throat services

9.1.4 In addition to the provision of dental care at the primary care level, 10 dental clinics are operational at the hospital level. Besides, 12 specialised dental clinics located in regional hospitals offer oral surgery, orthodontic and endodontic treatment. In 2015, the dental clinics in hospitals recorded 108,163 attendances, including 24,166 attendances for specialised dental care.

9.1.5 Furthermore, State-owned health care institutions play a key role in health professional training programs by providing clinical placements and supervision to undergraduate and postgraduate medical students and other health professionals, including student nurses. Hospitals are also involved in health services research.

9.1.6 State-owned hospitals admitted 208,241 patients in 2015. The most common inpatient day care treatment was renal dialysis. 132,649 renal dialysis sessions were carried out in 2015.

9.1.7 Hospitals catered for 3,030,802 non-admitted patients in 2015, including 1,346,876 accident and emergency presentations, 1,040,781 sorted outpatient visits and 643,145 unsorted outpatient presentations. During the same year, there were 8,727 deliveries and 44,427 surgical interventions were performed.

9.1.8 TABLE XVIII and **TABLE XIX** indicate the overall work performance of regional, district and specialised hospitals in 2015.

TABLE XVIII: Work Performance of Public Hospitals, 2015

Accident & Emergency attendances	1,346,876
Sorted OPD attendances	1,040,781
Unsorted OPD attendances	643,145
Admissions	208,241
Surgeries	44,427
Deliveries	8,727
Renal Dialysis Sessions	132,649

TABLE XIX: Work Performance of Regional, District and Specialised Hospitals, 2015

HOSPITAL	A and E DEPTs	SORTED OPD	UNSORTED OPD	ADMISSIONS	SURGERIES
DR A.G Jeetoo	259,218	164,235	144,014	39,744	7,660
S.S.R.N	155,187	177,592	137,361	34,116	5,882
Flacq	114,819	115,826	134,864	25,392	4,800
J.Nehru	141,695	127,825	59,792	28,037	4,907
Victoria	208,049	260,067	136,681	44,828	9,976
Mahebourg	63,886	15,260	30,433	4,347	-
Souillac	85,025	24,392	-	8,202	1,244
SUB-TOTAL	**1,027,879**	**885,197**	**643,145**	**184,666**	**34,469**
Mental H.C	24,385	32,099	-	5,635	-
Poudre D'or	-	15,318	-	698	-
S.Bharati.Eye	147,121	77,300	-	9,138	8,402
E.N.T	147,491	12,214	-	5,202	5,333
Cardiac	-	18,653	-	2,902	1,583
TOTAL	**1,346,876**	**1,040,781**	**643,145**	**208,241**	**49,787**

9.1.9 The total number of surgical interventions performed at the Subramania Bharati Eye Hospital in 2015 was to the order of 8,402 (1,338 out-patient minor cases), out of which there were 5,172 cataract surgeries and 628 disorders of vitreous body and globe.

9.1.10 TABLE XX indicates the volume of the main types of clinical interventions undertaken at Subramania Bharati Eye Hospital in 2015.

TABLE XX: Work Performance of Subramania Bharati Eye Hospital, 2015

Out-patients attendances	224,421
Admissions	9,138
Cataract Surgeries	5,172
Total Surgeries	7,064

9.1.11 The Cardiac Centre is managed by the Trust Fund for Specialized Medical Care. 1,583 surgeries, including 921 cardiac surgeries were performed at the Centre in 2015. In addition, 264 neuro-surgeries and 2,028 angiographies/angioplasties were undertaken in 2015.

9.1.12 **TABLE XXI** illustrates the work performance of the Cardiac Centre in 2015.

TABLE XXI: Work Performance of Cardiac Centre, 2015

Out-patient attendances	18,653
Admissions	2,902
Cardiac Surgeries	921
Vascular Surgeries	120
Total Surgeries	1,583
Angiography/Angioplasty	2,028

9.1.13 Support services which form an integral part of the consumption of services by patients include services provided by the SAMU, the central health laboratory and regional laboratories, the Mauritius Blood Service, Rehabilitative Services, imaging diagnostic services as well as hotel and transport services.

9.1.14 The Service d'Aide Medicale d'Urgence (SAMU) was set up in December 1997 with the support of the French Government and with the collaboration of the Commission de l'Ocean Indien. There is a SAMU unit at each of the five Regional Hospitals, with a fleet of 15 ambulances equipped with high-tech equipment and drugs.

9.1.15 In 2015, 34,287 calls were received, out of which a total number of 10,998 cases were attended by the SAMU Team. These calls are sorted into non-emergencies, emergencies and acute emergencies. **TABLE XXII** gives an indication on the number of cases attended by SAMU in 2015.

TABLE XXII: Number of Cases Attended by SAMU, 2015

	January – June	July – December	TOTAL
Primary Interventions	4,007	3,925	7,932
Secondary Interventions	1,508	1,538	3,046
Evacuation Sanitaire	7	13	20
TOTAL	**5,522**	**5,476**	**10,998**

9.1.16 The Central Health Laboratory (CHL) is an essential component of the national health system. Its mission is to provide effective high quality diagnostic services responsive to the needs of patients, physicians and other users. CHL acts as a diagnostic and referral public health laboratory. It also caters to some of the needs of the private medical sector on a fee-for-service basis.

9.1.17 This CHL undertakes tests in the field of biochemistry, haematology, bacteriology, parasitology, virology and molecular biology, histopathology, cytopathology and blood transfusion services. 10,417,716 pathological tests were carried out in 2015.

9.1.18 The National Blood Transfusion Service (NBTS) caters for the need of blood and blood components for all public and private health care institutions in the country. It collects blood at fixed points as well as through a system of mobile blood collection throughout the island. The fixed points of blood collection are found at Blood Banks attached to the Regional Hospitals such as Dr AG Jeetoo Hospital, SSRN Hospital and Flacq Hospital.

9.1.19 In 2015, 46,167 pints of blood were collected during the same year with the assistance of the Civil Society, the Blood Donors Association, the Association of Blood Donation Organisers and other NGOs. A haemovigilance system has been introduced to reduce and to remove adverse reactions associated with transfusion of blood and help the NBTS to further improve the quality of blood products.

9.1.20 Imaging diagnostics include an array of imaging technologies to diagnose and treat diseases, such as plain x-ray, bone and soft tissue imaging, contrast x-rays or photo-imaging, diagnostic ultrasound, Computed Tomography (CT), Computer-assisted Tomography (CAT) and Magnetic resonance imaging (MRI). In 2015, 15,229 CT scans and 3,872 MRI were carried out.

9.1.21 Under the Overseas Treatment Scheme (OTS), the Ministry of Health and Quality of Life has collaborative arrangements with foreign specialized institutions for the treatment of cases inoperable in Mauritius. The public health sector also receives the visits of foreign medical teams to perform complicated surgeries locally in fields such as paediatric surgery, cardiac surgery, ophthalmology, orthopaedics and ENT surgery.

9.1.22 In 2015, a total of 242 cases at a total cost of Rs 59,883,827, were referred abroad for treatment. The number of cases treated abroad by specific medical intervention is indicated in **TABLE XXIII.**

TABLE XXIII: Number of Cases Treated Abroad by Treatment, 2015

Cases	Number of patients
Eye Treatment - (Medical Research Foundation, Chennai)	49
Neurosurgical Treatment - (VIMHANS, New Delhi and Apollo Hospital, Chennai)	60
Cardiac Treatment - (Manipal Hospital, Bangalore)	39
Others (Leukaemia, Orthopaedic, ENT, Cancer, Etc) - (Apollo Hospital, Indraprstha, Apollo Hospital, Manipal Hospital, SMH Curie, KKR ENT, etc)	94

9.1.23 Some 124 foreign teams in different specialties (urology, ophthalmology, maxillofacial surgery, cardiac surgery and spinal surgery) visited Mauritius from 2011 up to 2015 and performed some 2,102 complicated surgeries.

9.1.24 Corneal transplants are being carried out at Subramania Bharati Eye Hospital by local eye Specialists who have benefitted from hands-on training from visiting experts. Our local doctors have also benefitted from training by visiting experts in laparoscopy, endoscopy, cardiac surgeries, ENT and orthopaedics surgeries.

9.2 Constraints and Challenges

9.2.1 Hospitals in Mauritius account for the bulk of the State's expenditure on health. Approximately 83.4% of the Ministry's annual budget is allocated to hospitals, out of which 65.1% is spent on salaries of personnel.

9.2.2 The major challenges at the hospital level are, *inter-alia*, the following:

- increasing demand for the treatment of non-communicable diseases;
- increasing demand for long-term care and treatment of the elderly;
- rising expectations of patients for improved quality health care;
- timeworn infrastructures with limited space;
- obsolete medical equipment;
- increasing demand for specialized and super speciality services;
- overcrowding at Accident and Emergency departments;
- increasing demand for clinical training; and
- rising hospital costs.

9.3 Hospital Services Strategic Actions

9.3.1 Strategic Actions for the period 2017-2021 are indicated in **Box 5.**

Box 5

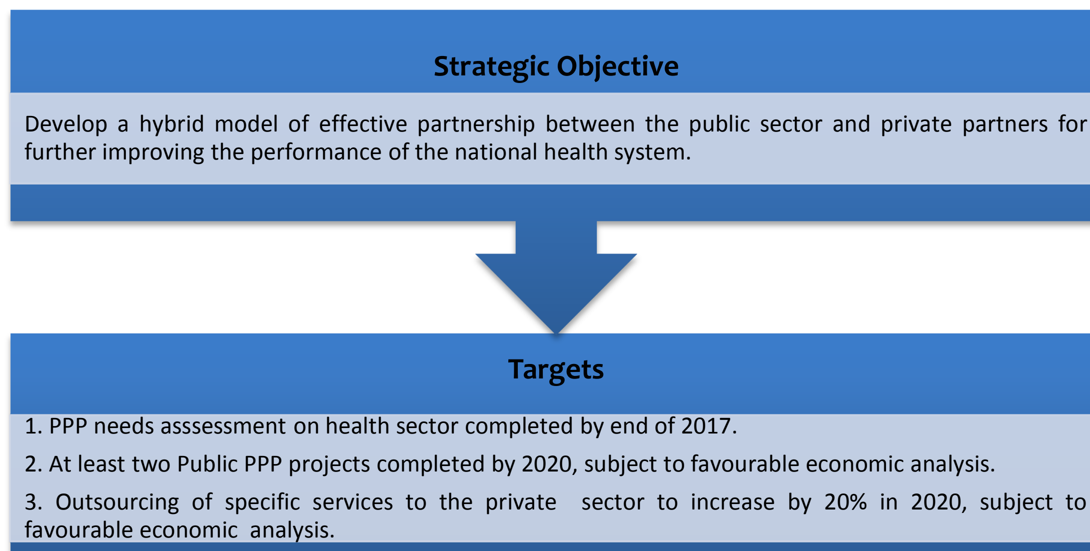
STRATEGIC ACTIONS

1. Formulation and implementation of Master Plans for each Regional Hospital, which will, *inter-alia*, include the construction of,
   - A modern hospital at Flacq,
   - A state-of-the-art centre of excellence for ophthalmology services,
   - A modern Ear, Nose and Throat Hospital,
   - A new Block at the Victoria Hospital,
   - A paediatric intensive care unit,
   - Private wings in each Regional Hospital as a new health financing initiative, and
   - Units for geriatric care in each Regional Hospital.
2. Completion of a National Cancer Centre and strengthening of nuclear medicine services with provision of a PET scanner facility.
3. Extension of the J. Nehru and SSR National Hospitals.
4. Strengthening of adult and neonatal intensive care services in all Regional Hospitals.
5. Setting up of stroke units.
6. Provision of a round the clock dental care services and expansion of specialised dental care services in all Regional Hospitals.
7. Setting up of a new Cardiac Surgery Centre and a satellite Cardiac Surgery Centre at Victoria Hospital.
8. Building of a National Health Laboratory Services Centre.
9. Audit and phased replacement of medical equipment.

10. Revamping of emergency and critical care services and review and strengthening of S.A.M.U services, including the delivery thereof.
11. Reorganisation of ambulance services.
12. Construction of a new Warehouse of International Standard for pharmaceutical products and medical consumables with modern logistics for stock control and management.
13. Introduction of shift system in hospitals in order to further improve quality of health care services being delivered.
14. Provision of supervised care by specialists physically present in regional hospitals on a 24 hour basis.
15. Construction of a National Rehabilitation Centre and upgrading of rehabilitation facilities in all health regions,
16. Setting up of a Transplantation Centre including a Bone Marrow Transplantation Facility.
17. Provision of in vitro fertilization facilities.
18. Phasing out of the Overseas Treatment Scheme by building up capacity in terms of manpower and equipment.
19. Establishment of cost centres in each Regional Hospital.
20. Implementation of E-Health plan in all hospitals.
21. Enhance traditional medicine services.
22. Feasibility study on the construction of a new multi-storeyed building for inpatient and support services at Victoria Hospital.

Note: Feasibility Studies will be undertaken for all projects with a project value exceeding Rs 100 million.

10. Public Private Partnership



Partnership in the health sector offers the potential to combine the strengths of both public and private organizations to address growing health challenges and health care financing constraints.

10.1 Situational Analysis

10.1.1 The health care sector in the Republic of Mauritius comprises non-profit and profit making enterprises. The non-profit enterprise is mainly represented by the State which intervenes in the market for health through direct involvement in the funding and provision of free health care services to the population.

10.1.2 Other non-profit entities operating in the country include local government institutions, para-statal bodies, non-profit non-governmental and faith based organizations, civil society organizations and non-profit multilateral agencies.

10.1.3 Profit-making stakeholders in the health care market include private health institutions, private medical practitioners and other health care workers such as dentists, health insurance companies, private pharmacies and medical imaging facilities, medical laboratories, non-allopathic medical practitioners and for profit non-governmental organizations. Payments for health care services are effected through direct out-of-pocket payments by users or through private health insurance schemes.

10.2 Constraints and Challenges

10.2.1 Public Private Partnership (PPP) in the delivery of health care services has existed since the pre-independence period in Mauritius. For example, in the fifties, most of the deliveries were undertaken by traditional birth attendants. The private sector, including sugar estates, has been providing health services to its employees. NGOs have been in the forefront to control malaria and other communicable diseases.

10.2.2 Despite the provision of free health services by the State, the private health sector continues to develop. According to the 2015 Survey Report on Household Out-of-Pocket Expenditure on Health, households spent some Rs 10.8 billion on health and health-related services in the private sector in FY 2014.

10.2.3 The type of partnership which exists between the Ministry of Health and Quality of Life can be described as conventional partnership and is limited. In the field of specialized health services, the private sector is given the opportunity to upgrade the skills and knowledge of their staff in specialized public health institutions. Medical and nursing personnel working in the private sector are allowed to participate in surgery sessions at the Cardiac Centre. Clinical training facilities are offered in public health institutions to private medical and nursing students. Private foreign teams in specialized fields such as urology, ophthalmology, plastic surgery, cardiology, spinal surgery and paediatric, orthopaedic and cardiac surgery regularly visit the country to perform on complicated surgical interventions.

10.2.4 Private enterprises in the economic sector and for profit non-governmental organizations are involved in health promotion activities. A few expensive specialized services are outsourced by the Ministry of Health and Quality of Life to both local and foreign health institutions through contractual agreements. Hotel services, excluding catering, for public health institutions are outsourced to local private enterprises.

10.2.5 MOUs

10.2.6 Besides, private foreign teaching hospitals collaborate with the Ministry of Health and Quality of Life in capacity building programs. Pre-registration training of medical students is exclusively carried out in State-owned hospitals. There is active involvement of the private sector to support Government's policy of developing the country into a medical and knowledge hub and promoting health tourism.

10.2.7 Over the years, demand for health care services in the public sector has significantly increased. The public health sector is confronted with several factors which exert an

upward pressure on health expenditure. Some of these factors are:- an ageing population, increase in chronic diseases, recruitment of new and additional staff, the fast growing pace of medical technology and new diagnostic techniques, resurgence of past communicable diseases and emergence of new diseases, inflated prices for imported drugs, supplies and consumables, growing expectations of health consumers for a wider range of clinical treatments and improved quality of services, increasing capital outlays for upgrading and constructing new infrastructures and maintenance costs.

10.2.8 Besides, sluggish economic growth due to worldwide economic recession continues to impact negatively on social spending, including health. Gross Domestic Product (GDP) growth which was 5.4% in 2005 declined to 4.6% in 2006. In FY 2015/16 economic growth rate was 3.4%. GDP grew by 3.6% in 2011 and GDP for FY 2016/17 is expected to grow by 4.1%.

10.2.9 The budget 2016/17 and indicative estimates for FY 2017/18 and FY 2018/19 imposes ceilings on public health expenditures. Investment in the public health sector for the next three years is estimated at Rs 3.04 billion, excluding funds for additional and new projects and for their respective recurrent expenditures.

10.2.10 On an annual basis, public health expenditure as a percentage of total government spending is estimated to stabilize at approximately 7.7%. Consequently Mauritius will not be able to allocate 15% of total government expenditure to health, as endorsed by Mauritius in Abuja in 2000 and in Kampala, Uganda in 2010.

10.2.11 Per capita public expenditure on health, in FY 2016, will stagnate at approximately Rs 8,631 or US$ 241. The aspiration of Mauritius to attain the Singapore level of around US$ 800 per capita government expenditure on health and the provision of a quality of care comparable to developed nations is compromised.

10.2.12 In the light of the above mentioned constraints and challenges, it is imperative to re-engineer the role of the private entities in the health sector.

10.2.13 Wastages/ Audit Report

10.3 Public Private Partnership Strategic Actions

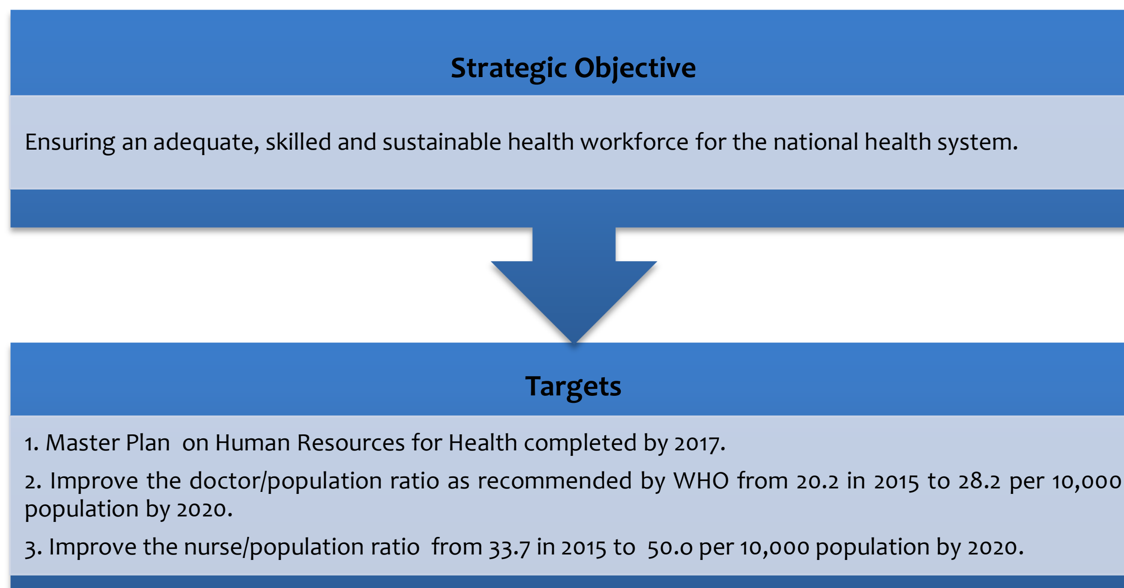
10.3.1 Strategic actions to strengthen Public Private Partnership in the health sector during the next five years are elucidated in **Box 6**.

Box 6

STRATEGIC ACTIONS

1. Undertake an assessment needs on PPP in Health.
2. Consider the introduction of the Private Finance Initiation (PFI) based on appropriate models for the setting up of health infrastructures subject to favourable economic analysis.
3. Partnership with both local and foreign private health institutions for capacity building and Continuing Professional Development.
4. Outsourcing services to the private sector, through open bidding process and contractual agreements as and when required.
5. Rationalize Government funding to NGOs to ensure greater accountability and transparency.
6. Consider the introduction of the Hospital Franchising Model (HFM) on a pilot basis subject to favourable economic analysis.

11. Human Resources for Health



Health care is highly labour intensive and the different grades of clinical and non-clinical personnel required for each and every health intervention remain the pre-requisites for providing a quality service. A well-performing health system also depends on the knowledge, skills and motivation of all health workers, irrespective of their grades. As such, human resources for health constitute the cornerstone of the health system. It is, therefore, critical to ensure an adequate supply and mix of health workers to stimulate productivity and responsiveness for the provision of effective treatment and care.

11.1. Situational Analysis

11.1.1 Human Resources

11.1.1.1 The overall management of the Ministry of Health and Quality of Life, at the Headquarter Level, rests with the Senior Chief Executive who is assisted by officers in the grades of the administrative cadre and technical cadre. The administrative division is responsible for the formulation of policies, dealing with personnel and executive matters and controlling public expenditure. The technical team headed by the Director General Health Services is responsible for advising the Minister and top management on health policies and programmes in respect to the preventive, promotive and curative fields.

11.1.1.2 There are around 375 different grades of officers in the workforce of the public health sector. Some 13,000 officers are at present employed. They include some 1,111 doctors of whom 301 are specialists, 3,461 qualified nurses and midwives and 982 health care assistants. Staff costs represent the largest component in the Ministry of Health and

Quality of Life budget. Approximately 65.1% of the health budget is allocated to salaries and other charges.

11.1.1.3 **TABLE XXIV** indicates selected health manpower (Public Sector) statistics for the year 2011 to 2015.

TABLE XXIV: Selected Health Manpower (Public Sector) Statistics (2011-2015)

Year	2012		2013		2014		2015	
GRADE	No.	Per 10,000 population	No.	Per 10,000 population	No.	Per 10,000 population	No.	Per 10,000 population
Doctors	1,000	8.0	1,054	8.4	1,077	8.5	1,111	8.8
Dentist	59	0.5	58	0.5	58	0.5	58	0.5
Pharmacist	23	0.2	23	0.2	27	0.2	27	0.2
Qualified nurse and midwife	3,051	24.3	3,202	25.4	3,331	24.0	3,461	27.4

11.1.2 Education, Research and Training (ERT)

11.1.2.1 Improvement in the quality of healthcare depends on the competence, knowledge and skills of the health workforce to deal with health problems of the population. Education, Research and Training (ERT) underpin health and medical practice, and drive the quality and delivery of healthcare through the application of new knowledge and the principles deriving there from. The purpose of developing ERT programmes is to acquire self-reliance in the production of skilled and knowledgeable health manpower and the development of appropriate health care interventions.

11.1.2.2: Mauritian students have three options to undertake Undergraduate (Basic) Medical Courses, which are as follows:-

- overseas medical schools (most of the students),
- University of Mauritius (UOM): BSc Medical Sciences followed by completion of course overseas,
- local private medical colleges– SSR Medical College and Anna Medical College.

11.1.2.3 Two facts are relevant: (1) The exact number currently studying medicine is not known for certain, but is of the order of 1200 – 1400. (2) SSR Medical College admits batches of Mauritian students without taking into consideration the local needs. As a

result, there is an over production and oversupply of doctors in the domestic labour market.

11.1.2.4 **Postgraduate (Post Basic) Medical Courses:** Most students go overseas, but the Mauritius Institute of Health (MIH) has been running courses in a limited number of specialities with the University of Bordeaux. In addition, the MIH has been carrying out several training courses for doctors. The total number of doctors following post-graduation courses is not known (overseas in particular), but is estimated to the order of 200-300.

11.1.2.5 **Nursing:** The Central School of Nursing at Candos, with its branch at Pamplemousses, offers a 3-year certificate course, and practically all Mauritian nurses have received their basic education in these institutions. The University of Mauritius has run a BSc Nursing course in the past. The Apollo-Bramwell Hospital and City Clinic which are private institutions have started nursing courses, with the qualification being awarded by the University of Mauritius. Besides, Courses in Midwifery, Emergency Medicine, and Community Health are run by the Nursing School and the MIH respectively.

11.1.2.6 **Allied Health Professions:** These include such fields as clinical laboratory scientists, physiotherapists, occupational therapists, speech therapists, and opticians etc. There is a mix of both overseas and local training for this category of professionals and there is no post-basic training or CPD.

11.1.2.7 **Clinical Research:** There is some research carried out at the University of Mauritius, either alone or in collaboration with foreign institutions e.g. with Baker-IDI of Melbourne in the genetics of diabetes.

11.1.2.8 **Health Systems Research:** The MIH conducts research on health systems which includes: (1) health policy and systems research aimed at supporting policy and planning on all aspects of health systems, increasing access and coverage of services; (2) operational and evaluative research to improve efficiency, equity and effectiveness of primitive, preventive and curative services; (3) research on development of health information systems (*ad hoc*) relating to description of exposure, risks, behaviours, diseases, conditions etc. at population or group level.

11.1.2.9 **Continuous Professional Development (CPD):**

11.1.2.9.1 The provision of quality care services to meet patients' changing health care is linked to continuing professional development. Health professionals are obliged to become lifelong learners dedicated to updating their professional knowledge, skills, values, and practice. Continuing professional development (CPD) encompasses all of the

activities that health workers undertake both formal and informal to maintain, update, develop, and enhance their professional skills, knowledge, and attitudes.

11.1.2.9.2 According to the World Health Organization, CPD is a systematic and ongoing process of education, in-service training, learning, and support activities that build on initial education and training to ensure continuing competence, extend knowledge and skills to new responsibilities or changing roles, and increase personal and professional effectiveness.

11.1.2.9.3 One component of CPD is continuing education or training opportunities held in formal educational environments for professional health workers, such as physicians, nurses, and dentists, as well as allied workers such as dental, laboratory, and pharmaceutical technicians.

11.1.2.9.4 While CPD is often achieved through systematic learning opportunities integrated into health facility protocols and on-the-job training, less structured mechanisms for learning and development are also available to health workers. Informal opportunities for learning via spontaneous interactions with colleagues, professional reading, and reflections on one's own experiences are essential aspects of a health worker's professional development.

11.2 Constraints and Challenges

11.2.1 Based on WHO Health Workforce Density Standards, **TABLE XXV** below indicates the distribution of Human Resources for Health in countries classified by their income, including Mauritius.

TABLE XXV: Health Human Resources in Mauritius Compared with Country Income Groups

	WHO levels Per 10,000 population 2007 – 2013							Rep. Of Mauritius 2015	
	MIN	MED	MAX	LOW INCOME	LOWER MIDDLE INCOME	UPPER MIDDLE INCOME	HIGH INCOME	PER 10,000 population	Number
Physicians	0.1	14.0	77.4	2.5	7.9	16.1	28.7	20.2	2,550
Nursing and MID	1.4	25.3	172.7	5.3	18.0	26.3	88.2	33.7	4,261
Dentistry	<0.05	2.3	40.0	0.3	1.2	-	6.5	3.0	380
Pharmacists	<0.05	2.7	27.1	0.4	4.2	3.4	10.1	3.9	497

Source: WHO statistics

11.2.2 As indicated in **TABLE XXV**, the Human Resource (HR) situation in Mauritius in 2013 is comparable to that of the WHO median level in terms of health professionals and semi-professional staff. The doctor/population, nursing and midwife/population, dentist/population and pharmacists/population ratios in Mauritius exceeds that of the

levels in upper middle income countries. However, when compared to the levels in high income countries, Mauritius has exceeded half way for the doctor/population ratio while for the other ratios, the country level is almost half way.

11.2.3 The shortage of skilled and specialized personnel is a major obstacle to the delivery of specialized care. The survey on Recruitment and Retention in the Public Sector carried out by the Pay Research Bureau has revealed that the Ministry of Health and Quality of Life has been encountering difficulties to fill vacancies in the grade of specialist/senior specialist in practically all disciplines, namely general medicine, general surgery, obstetrics and gynaecology, paediatrics, orthopaedics, anaesthesia, radiology, pathology, radiotherapy, psychiatry, ophthalmology, ENT, dermatology, tuberculosis and chest diseases, cardiology, plastic and reconstructive surgery, physical medicine, neurosurgery and endocrinology.

11.2.4 To palliate the shortage of skilled and specialized personnel, the Ministry of Health and Quality of Life is having recourse to the employment on contractual basis/sessional basis of retired specialists and foreigners. To improve the number in the short and immediate terms, the Ministry of Health and Quality of Life has sponsored medical officers to follow specialist courses. These specialist courses are dispensed by the Mauritius Institute of Health in close collaboration with the University of Bordeaux. A few medical officers have also been granted scholarships to follow courses in India, China and Geneva.

11.2.5 The School of Medical Science at the University of Mauritius was set up in the 1990s to provide the first three years of MBBS Course locally. Students thereafter proceed to France or UK to complete their graduation.

11.2.6 Mauritians follows medical courses not only in Mauritius, but also in foreign countries such as China, India, UK, and France as well as in the eastern European countries of Hungary, Yugoslavia and Romania. This means that there is little homogeneity in the training received by the doctors practising in Mauritius. There is a strong need to bring some degree of uniformity.

11.2.7 Prior to obtaining registration, new medical graduates have to follow a two-year training programme for pre-registration House Officer which is structured and approved by the Medical Council of Mauritius.

11.2.8 Medical Health Officers/ Senior Medical Health Officers are required to work thirty-six hours at a stretch whenever they perform night duty. This causes undue stress to them. Besides, Government has to incur additional costs in terms of allowance payable to

them. The Pay Research Bureau (PRB) has recommended the implementation of a shift system. The shift system is being implemented at the level of all regional hospitals.

11.2.9 Mauritius has a well-established School of Nursing which has the capacity to train 200 nurses annually. This school of Nursing is operational at Victoria Hospital since 1959. Currently, there are a total of 319 student nurses following courses which are of three-year duration. In addition, two private institutions are now providing nursing courses since the past two years.

11.2.10 In view of the need to provide for specialized services in various areas, the role of the School of Nursing has to be reviewed. The school will make available on the market a pool of trained nurses from which both the public and private sectors can recruit. Moreover, it has been decided to upgrade the Certificate awarded to nursing students to a Diploma. The syllabus has been renewed accordingly and a bridging programme will be conducted for Nursing Officers holding a Certificate.

11.2.11 As far as dentists are concerned, nearly all of those in post have been trained abroad. Since 2006, one private dental school and the MAURAS School of Dentistry are operating in the Mauritius. The first cohort of graduates has already joined the labour market.

11.2.12 At present there is a scarcity of bio-medical engineers and other specialized technical personnel responsible for the maintenance of high-tech equipment. Students holding a university degree in bio-medical engineering do not have the opportunities for practical training in order to be registered as professional bio-medical engineers. There is, thus, the need to have a scheme for pre-registration training for them.

11.2.13 Education, Research and Training are dispersed among several stakeholders and lacks a national platform for coordination of all the related activities. There is no comprehensive regulatory framework to guide the development of the structures and systems required to sustain ERT.

11.2.14 **Medical:** (1) Quality issue: Non-uniformity of standards of medical education. (2) Production of trained doctors in excess of local needs.

11.2.15 **Nursing:** These include: (1) Drop-outs and attrition rates, with migration overseas and to the local private sector, result in a shortfall in the number of nurses, with severe staff shortages that impact on the quality of nursing care; (2) Need to modernise and upgrade basic Nursing Education (3) Expand opportunities for post-basic training.

11.2.16 Allied Health Professions: The main one is that there is no regulatory body for this group. Ministry of Health and Quality of Life is spearheading a working group to set up such a body.

11.2.17 Clinical Research: There is hardly any Applied Research because the health sector is essentially a service provider. With the recent passage of a Clinical Trials Act, it is expected that investors will come in to start clinical trials of drugs. Mauritius being a multi-racial and multi-ethnic country with a stable democratic political system offers an excellent platform for North-South and South-South collaboration and partnership in the field of clinical trials.

11.2.18 Whilst research is given priority by Government in view of developing a knowledge hub, presently there is no effective National Health Research System in the country. The main reasons are basically linked to our Small Island Developing State (SIDS) category which can explain the paucity of trained researchers, few health research institutions, no regular publication for health scientists and inadequate funding for health research.

11.2.19 Need to develop a research culture among health professionals and policy-makers, enhancing capacity building to carry out health research, sharing of limited resources in cost-effective research prioritization strategies and multi-skilling of health researchers.

11.2.20 There is scope for research to be carried out on all the following disease fronts simultaneously, namely, to control diabetes, obesity, cardiovascular diseases, cancer and other NCDs, the growing problem of HIV/AIDS and also emerging diseases like Chikungunya as well as the potential Avian-Flu pandemic.

11.2.21 With the development of Information and Communication Technology (ICT) and the transformation of Mauritius into a cyber-island, it is expected that the digital revolution would be of benefit to the health research sector by providing latest knowledge and health information through on-line dedicated Internet connection, communication and interaction amongst the regional and global community of health researchers.

11.2.22 With the setting-up, in Mauritius, of undergraduate and post-graduate medical courses and of nursing schools, both public and private, an academic environment enhancing career structure for health professionals actively engaged in health research can be developed, thereby decreasing the brain-drain of health manpower in the country.

11.2.23 The Research Unit at the MIH has a robust track record of supporting national health strategies aimed at improving health outcomes, health services and health equity by providing decision makers at all levels with the necessary data for informed decision

making; it has also strengths in epidemiological surveillance and research through its international links and collaboration.

11.3 Human Resources, Continuous Professional Development and Research Strategic Actions

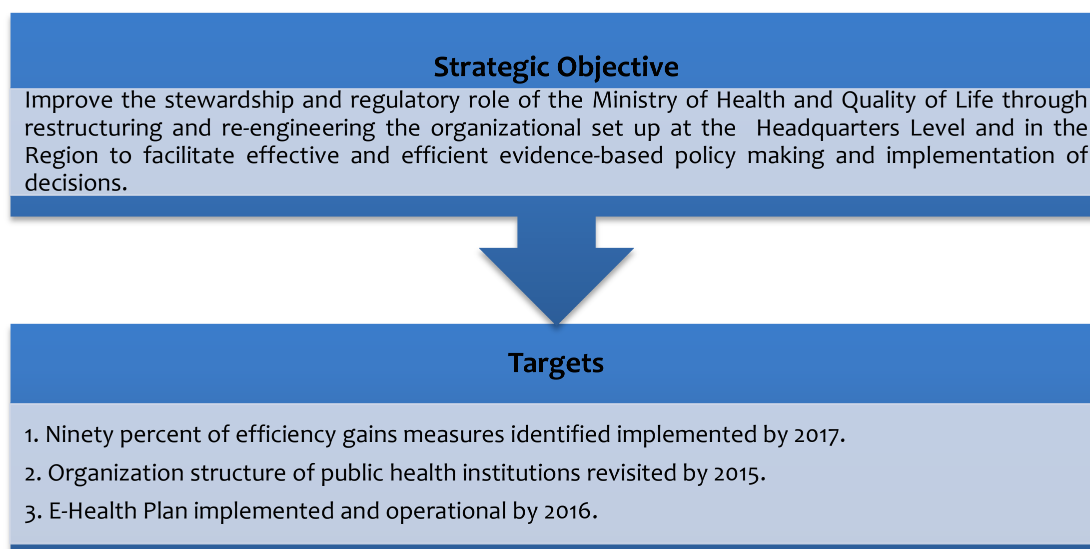
11.3.1 Strategic Actions on Human Resources, Continuous Professional Development and Research are illustrated in **Box 7.**

Box 7

STRATEGIC ACTIONS

1. Develop a Master Plan on Human Resources for Health which, will also, *inter-alia*, include, recommendations for enhancing education, research and continuous professional development.
2. Setting up of a Public Service Commission for Medical and Health workers in order to fast- track recruitment and promotion for smooth running of health services.
3. Implementation of the Registrar grade (intermediate between medical and health officer and specialist) for the medical profession.
4. Develop a road map for the nursing profession.
5. Introduce re-validation process for continued registration of doctors and dentists with the Medical and Dental councils of Mauritius and eventually of other health professionals.
6. Further development of trained and skilled ambulance personnel and an increase in ambulance fleet.
    1. Make Continuous Professional Development mandatory and implement a Continuing Professional Development programme for all health care professionals.
    2. Initiate actions for responsibility for medical education and training to fall within the mandate of the Ministry of Health and Quality of Life.
    3. Transform the Mauritius Institute of Health (MIH) into a University of Medical and Health Sciences with its centre for medical research.
    4. Engage and strengthen collaboration with medical education institutions locally and abroad for support in the field of capacity building in the health sector.
    5. Revisit the model of nursing education and develop a roadmap for training for nurses.

12. Governance



According to the World Health Report 2000, the ultimate responsibility for the performance of a country's health system lies with Government. Good governance and stewardship are pre-requisites for responding to the legitimate expectations of the population and improving health. Stewardship requires vision, intelligence and influence at the level of the decision makers and top management to guide, monitor and evaluate the working and development of the nation's health strategies and actions.

12.1 Current Situation

12.1.1 In Mauritius, the Ministry of Health and Quality of Life assumes the stewardship role in the field of health. The Minister of Health and Quality of Life, who is responsible for making policies on health and health-related matters on behalf of Government, is supported and advised by the Senior Chief Executive and the Director-General Health Services with a team of senior administrators and technicians.

12.1.2 The Ministry of Health and Quality of Life is responsible; *inter alia*, for, policy making, planning and management, resource allocation, legislation and regulation, monitoring, inter-sectoral policies and programmes, international relationships and parliamentary matters.

12.1.3 Besides, the Ministry of Health and Quality of Life ensures that private health institutions comply with the law and regulations in force.

12.1.4 Health care services are provided in the five Regional Hospitals. Each regional hospital is headed by a Regional Health Director (RHD). The latter is responsible for the overall administration and management of the regional health services including services provided at Community Health Centres, Area Health Centres and other health institutions falling under the jurisdiction of the Regional Health Director. As part of the decentralization process, certain personnel, financial and procurement management functions, previously undertaken at the Ministry's Headquarters, are now the responsibilities of the RHDs.

12.1.5 Government is committed to further decentralize and modernize health care services with a view to rendering them more accessible to the public and more responsive to the needs of the citizens.

12.1.6 Conscious of the need to achieve efficiency gains and to enhance value for money, the Ministry of Health and Quality of Life started a process for the implementation of a number of measures ranging from primary to specialized health care over the medium to long term periods. Some among the areas covered by the Ministry of Health and Quality of Life include strict control on expenditures on overtime, utilities, office expenses, stationeries and management of vehicles. Besides, in line with the concept of "Maurice Ile Durable", the new Dr. A.G Jeetoo Hospital is being constructed in an eco-friendly manner so as to generate savings on operating costs. Furthermore, there will be savings in terms of rental and overtime when all support services such as dental, finance, dialysis etc. will be accommodated under the same roof of the new Dr. A.G. Jeetoo hospital.

12.1.7 The Central Efficiency Management Committee (CEMC) has been set up to oversee the preparation and implementation of efficiency gains measures. The overall aim is to move towards sustainable gains without compromising on quality of care and services.

12.1.8 Over the medium term, the Ministry of Health and Quality of Life will continue on the same trend with the implementation of additional measures to achieve efficiency gains which will generate savings to the tune of around Rs 400 million. These measures will cover, *inter-alia*, a wide spectrum of areas such as catering, transport management, management of pharmaceutical and nonmedical supplies, payment of overtime, clinical practice guidelines and protocols and use of ICT (e-health).

12.2 Constraints and Challenges

12.2.1 Developing a health workforce which offers primary to tertiary services requires a well-functioning governance infrastructure. Health workforce assessment, policy development, planning and monitoring require dialogue between stakeholders, including Government and the civil society.

12.2.2 Major challenges in the public health sector include:-

- Managerial challenges: the alignment of the organization structure to support technical functions and management of hospitals by professional managers instead of doctors who are promoted to the grades of managers/directors;
- Infrastructure/ Asset & Equipment maintenance and management;
- Weakness in planning and implementation of projects and ;
- Need to avoid duplication of health services in order to achieve efficiency and effectiveness and customer satisfaction.

12.3 Governance Strategic Actions

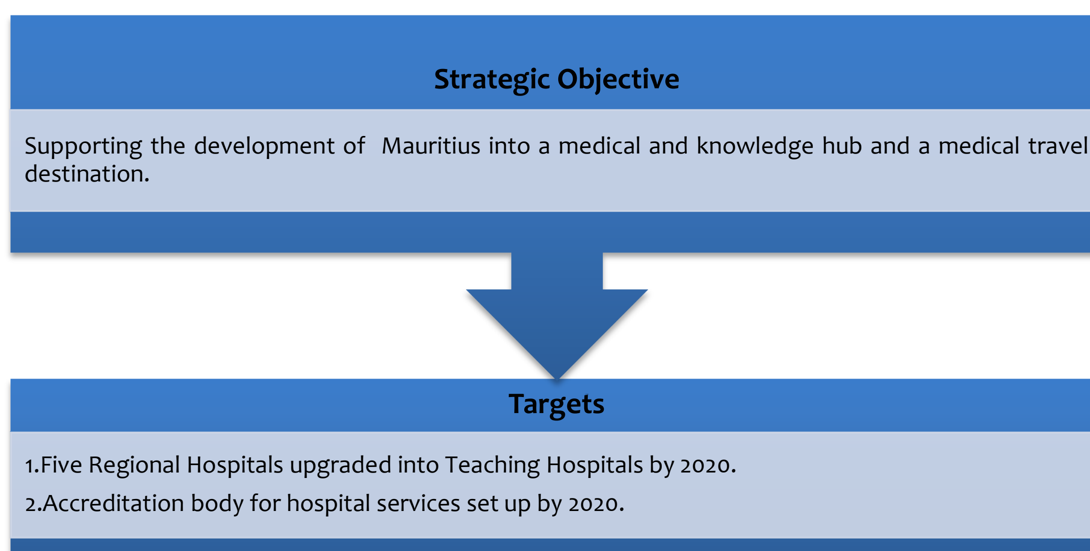
12.3.1 Strategic Actions are illustrated in **Box 9.**

Box 9

STRATEGIC ACTIONS

1. Review the organizational structure of the Ministry.
2. Revisit the management structure of the public health sector with a view to devolution of the decision making process whilst fostering synergy between the organizational structures at the Central and Regional levels - consideration to be given to the concept of autonomous Regional Health Authorities.
3. Setting up of a National Drug Regulatory Authority to further improve quality of medicines provided.
4. Implementation of E-Health project, including E-procurement.
5. Initiate actions for review of legislation governing procurement to enable efficient and timely procurement of medicines, consumables and medical equipment.
6. Setting up of a robust project implementation unit within the Ministry in order that projects within the health sector are implemented in a timely and effective manner.
7. Setting up of a legal division within the Ministry to oversee all legal mat-ters of the ministry and to support the drafting of legislations.
8. Introduction of a Communication and Marketing Division within the Ministry for effective communication on health matters to the public and for marketing of services. This division will provide a 24-hour hotline service and keep a register of complaints.
9. Setting up of a data analysis centre for analysis of data and preparation of reports to support policy formulation and monitor policy implementation.
10. Institutionalize the development of National Health Accounts.
11. Develop new legislations and review existing legislations in response to emerging health and medical challenges – Allied Health Professionals Council Bill, legislation regulating medical consumables and equipment, In vitro fertilization bill, Private Health Institutions Regulations, Food Regulations, Amendments to the medical and dental councils acts, Food Act, Transplantation legislation amongst others.
12. Implementation of Cost Centre Project and payment for services by those covered by private health insurance schemes.
13. Implement the Anti-Corruption Framework.

13. Medical Hub



The opportunities for Mauritius to benefit from the global medical tourism industry and to upscale its export of health related services exist and are real, subject to the implementation of coherent strategies with the active involvement of both the public and private sectors.

13.1. Situational Analysis

13.1.1 Over the last five years, the healthcare and medical travel sector has experienced sustained growth and has attracted significant domestic and Foreign Direct Investment (FDI). The healthcare sector is gradually becoming an important contributor to economic growth.

13.1.2 The number of private clinics increased from 12 in 2005 to 17 in 2016. The number of beds in private clinics and hospitals has significantly increased from 450 in 2005 to 705 in 2016. Fortis Darné and Apollo Bramwell are a few examples of private healthcare providers which have invested in state-of-the-art medical centres in Mauritius. The private healthcare sector currently employs around 2,000 people, representing nearly a 100% increase from 2005 and generating annual revenues close to Rs 2 billion.

13.1.3 According to the Bank of Mauritius figures, FDI has increased in a sustained manner in the healthcare sector over the last 5 years, Rs 2 million in 2006, Rs 29 million in 2007, Rs 120 million in 2008 and Rs 145 million in 2009. In 2016, an even higher level of FDI is expected with the continuous efforts of the Board of Investment (BOI) to attract leading

players to operate in the country, while at the same time encouraging and facilitating local investment in the sector.

13.1.4 Based on the 2010 edition of the annual private healthcare industry survey conducted by BOI, medical travel is experiencing a healthy growth. In fact, the number of foreign patients seeking medical care in Mauritius has increased from a mere 1,000 in 2005 to more than 10,000 in 2010. The main sources of foreign patients travelling to Mauritius in 2010, were from Madagascar with 30%, followed by Seychelles (17%), Reunion Island (14%), France (11.5%), UK (6%), South Africa (5%) and 16.5% for other countries.

13.1.5 Medical education is an important component in the strategy of developing Mauritius into a Medical/Knowledge Hub. The country has successfully attracted investment in medical education with the setting up of three medical colleges, namely the SSR Medical College and D.Y.Patil Medical Education, and Anna Medical College.

13.1.6 The public health sector currently comprises five main regional hospitals and five specialized hospitals representing a total of 3,432 beds which can be made available for clinical training of students. The private sector has 705 beds which are not currently being used for clinical training. The medical education sector is expected to get a boost with the proposed changes in the clinical training framework and the optimization of State hospitals for clinical training.

13.1.7 The Life Sciences sector in Mauritius is flourishing. This is supported by a strong commitment from the government and driven by innovation. Initiatives undertaken so far relate to pre-clinical research, clinical research, clinical data management, drug discovery, bioinformatics and pharmaceutical manufacturing.

13.1.8 Mauritius has a well-developed medical devices industry manufacturing a wide range of quality products. Leading industry players from Europe like Johnson & Johnson, Carl Zeiss Inc., Laboratoire Perouse and Natec Medical have set up their production units in the country with an annual turnover exceeding Rs 1 billion and employing more than 500 people. The companies operating in the medical devices industry are ISO 9001 and ISO 13485 certified and those exporting to the EU and the USA satisfy the EU GMP and the US FDA requirements.

13.1.9 The pharmaceutical sector is becoming self-sustaining as the sector continues to grow and is tagged for long-term expansion and further development. Over the recent years, global pharmaceutical companies like Ajanta Pharma and Mascareignes Pharmaceutical Manufacturing have started operations in Mauritius employing some hundred people and are engaged in the production of antibiotics, cholesterols lowering drugs, anti-malarials, antipyretics and pain killers exported to African countries and the

rest of the world. Other global players have also expressed interest to set up manufacturing units in Mauritius. An integrated Pharmaceutical Park is currently being planned.

13.1.10 Mauritius is a leading exporter of primates (Cynomolgus Macaques). Every year some 10,000 primates are exported from Mauritius to leading pharmaceutical and biotech companies for pre-clinical research purposes.

13.1.11 The Mauritian cynomolgus macaque, because of its insular habitat exhibits remarkable peculiarities, is highly desired by researchers. These primates are known to be virus-free and genetically homogenous, which makes them also very useful in pre-clinical research. Six Mauritian companies export macaques to Europe and USA to companies such as Charles River, Covance, Parexel, Sanofi, GSK, etc. The acquisition of shares of NOVEPRIM, a leading primate breeding company in Mauritius by Covance clearly shows the potential Mauritius has for pre-clinical trials activities.

13.1.12 Presently, there is one company involved in contract research for cosmetic products in Mauritius and engaged in activities such as evaluation & testing of dermatological and cosmetics products. The company works with leading multinational companies such as L'Oreal, Nestle, Galderma, Sanofi Aventis, Pierre Fabre, Clarins, Yves Rocher, Expanscience, Lancome and LVMH, amongst others.

13.2 Constraints and Challenges

13.2.1 In line with the policy to earn foreign currency, Government has established specific strategies to reengineer and boost the export services sector. The strategy of Government is to develop the country into a knowledge-based economy and transform the island into a Regional Centre of Excellence in the field of medical treatment and care while at the same time promote health tourism. The implementation of these ambitious strategies is well underway. Mauritius is already on the 'take-off' stage to become a regional medical/knowledge hub.

13.2.2 The global healthcare industry is worth US$ 1 trillion. The world medical travel industry, which is currently worth US$ 100 billion, is one of the fastest growing industries, forecasted to grow at a Compound Average Growth Rate (CAGR) of 35% over next 3 years. An increase in the number of foreign patients from a current level of 10,000 to 100,000 by 2020 will represent a CAGR of 25% over the next 10 years. Mauritius aspires to attract 100,000 foreign patients in 2020. With an average spending of US$ 10,000 per foreign patient visiting Mauritius, there is a potential for this industry to generate annual revenues close to US$ 1 billion by 2020.

13.2.3 Pharmaceutical research conducted in Mauritius can provide solutions to a broad range of genetic, infectious and lifestyle diseases like diabetes, cardiovascular diseases, cancer, hypertension amongst others prevailing in Mauritius and countries of the region. The Clinical Trials Act provides the legal framework to conduct clinical trials with the setting up of a Clinical Research Regulatory Council, and Ethic Committee and a Pharmacovigilance Committee.

13.2.4 Mauritius is also well positioned to become a vibrant knowledge hub, catering for the tertiary educational needs, especially in the field of medicine, post graduate medical courses and nursing for both local students and foreigners. By the year 2020, the United States will require some 200,000 additional doctors. Besides, many countries in Europe will have to import a significant number of medical and paramedical manpower to cater for their growing health needs.

13.2.5 There is a huge potential to develop research for cosmetic products in Mauritius. In fact, Mauritius has all the attributes to develop cosmetic research activities and attract leading multinational companies. The targeted segments include, plastic clinics, cosmetic surgery clinics, wellness centres, hair grafting clinics, cosmetology, laser clinics, dental clinics, eye hospitals, geriatrics clinics, retirement villages, multi-specialty clinics, stem cell treatment, gene therapy, Chinese traditional medicine and Ayurveda.

13.2.6 Solid incentives, effective and multi-lingual workforce and implementation of necessary frameworks are some of the main contributing factors in making Mauritius an ideal destination for these sectors.

13.3 Medical Hub Strategic Actions

13.3.1 Strategic Actions are described in **Box 10.**

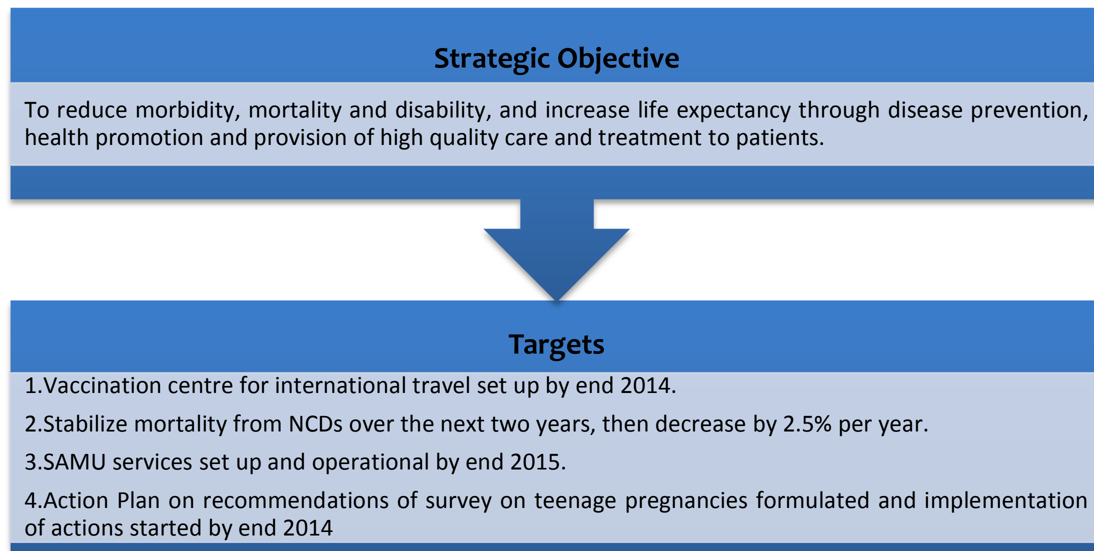
Box 10

STRATEGIC ACTIONS

1. Elaboration of an appropriate regulatory framework for accreditation of hospital services and the pricing of these services.
2. Formulation of a regulatory framework for the Wellness industry.
3. Develop a website on medical travel tourism.

14. Rodrigues and Outer Islands

(To be worked out after consultation with Commission for Health and Sports)



15.1 Situational Analysis

15.1.2 **Vision:** A healthy population with an enhanced quality of life.

15.1.3 **Mission:** Provide high quality and timely health services.

15.1.4 Rodrigues is one of the outer islands of the Republic of Mauritius. With a surface area of 104.0 square kilometres, the island is situated at approximately 560 km to the North East of Mauritius. The estimated population of Rodrigues as at end of December 2012 was 38,240, compared to 35,885 in 2000.

15.1.5 In 2002, Rodrigues was granted a degree of autonomy resulting in the establishment of the Rodrigues Regional Assembly (RRA). A Chief Commissioner has been appointed to oversee the administration of the internal affairs of the island.

15.1.6 Rodrigues has its own specifications with features and limitations of a Small Island Developing State (SIDS), struggling to sustain economic progress. The Rodrigues Budget 2013 with the theme "Ensemble Rétablissons la confiance, Relevons les grands défis" proposes actions to:

- "Rétablir la confiance".
- "Répondre aux besoins de base de la population".
- "Assurer un développement économique durable".
- "Améliorer les infrastructures publiques".
- "Le développement social et culturel".

15.2 Health System

15.2.1 In line with the overall social policy of the Republic of Mauritius, health care services from primary health care to curative care, including specialized services, are provided free of any user cost at the point of use to the population of Rodrigues.

15.2.2 The Rodrigues health care delivery system falls under the purview of the Ministry of Health and Quality of Life based in Port-Louis, Mauritius. The latter is responsible to formulate the overall policy for the health sector in the island. The Commission for Health in Rodrigues is responsible for all health matters in the island. The proper functioning of health facilities fall under the responsibility of the Department of Health which is headed by a Departmental Head.

15.2.3 The health care delivery system comprises one main hospital, the Queen Elizabeth Hospital (QEH) situated at Creve Coeur, Port Mathurin and two Area Health Centres located respectively at Mont Lubin and La Ferme. In addition, there is a network of fourteen primary health care institutions which have been set up throughout the island, namely at BaieTopaze, AlleeTamarin, Port SudEst, Malartic, Mangues, RiviereCocos, Cascade Jean Louis, Batatran, Roches Bon Dieu, Montagne Goyave, Petit Gabriel, Grand Baie, Oyster Bay and Soupir.

15.2.4 The QEH provides both outpatient and inpatient services. Its bed capacity is 135. Patients with complicated cases are referred for treatment in Mauritius. Special arrangements have been made with the national carrier, Air Mauritius, to transport emergency cases to the main island. In 2012, 414 cases were referred to Mauritius for treatment. **Table XI** highlights some of the services provided by the QEH.

TABLE XI: Services Provided at Queen Elizabeth Hospital

• Accident & Emergency	• Dispensing of drugs
• Outpatient Clinics	• Dermatology
• Laboratory Investigations	• Respiratory Medicine
• General Medicine	• Gastroenterology
• General Surgery	• Anaesthesia
• Geriatric medicine	• Gynaecology /Paediatric
• Social Care Services including therapy	• Imaging Facilities
• Infectious Diseases	• Intensive Care
• Orthopaedics/ Psychiatry	• Renal Dialysis
• Cardiology	• Prenatal and Postnatal
• NCD Clinics	

15.2.5 The two Area Health Centres at Mont-Lubin and La Ferme provide primary care services and selective inpatient services on a twenty four hour basis. The bed capacity of these two area health centres is 54. Services provided at the area health centres and the fourteen community health centres are indicated in **Table XII** below.

TABLE XII: Package of Primary Health Care Services

• Maternal &Child Health	• Specialist Sessions
• NCD & Diabetic Clinics	• Dispensing of drugs
• Food Safety	• School Health
• Immunization	• Family Planning & Reproductive Health Services
• Diagnosis and treatment of common diseases and injuries	• Referral to & Follow up from hospitals
• Surveillance of Communicable Diseases	• Health Promotion
• Dental Clinics	• Environmental & Occupational Health
• General Consultation	• Immunization
• Selective Inpatient Services only at La Ferme and Mont Lubin AHCs	

15.2.6 A summary of work performed at the QEH, Mont-Lubin and La Ferme AHCs and community health centres are illustrated in **Table XIII.**

TABLE XIII: Summary of Work Performed In 2012

Institution	Bed Capacity	Outpatient Attendances	Admissions	Bed Occupancy Rate	Deliveries	Operations Performed
Queen. Elizabeth Hospital	135	71,161	9,442	58.2	687	1,844
Mont Lubin A.H.C	28	59,051	1,544	31.9	8	-
La Ferme A.H.C	26	56,842	1,250	21.7	7	
Community Health Centres		49,074	-			-
Total	189	236,128	12,236	49.5	702	1,844

15.3 Health Manpower

15.3.1 The health institutions in Rodrigues are manned by a team of 19 doctors, 2 dentists, 159 qualified nurses and midwives and other paramedical and manual workers. This amounts to one doctor for every 1,912 inhabitants, one dentist for 19,120 inhabitants and one nurse/midwife for every 241 inhabitants respectively.

15.3.2 While most of the paramedical workers and manual workers are Rodriguans, the medical and dental personnel who are on the establishment of the Ministry of Health and Quality of Life are posted to the island on a tour service basis. Their displacement allowances are paid from the budget of the Commission of Health of the RRA. The Ministry of Health and Quality of Life, at the request of the Commission, provides technical support of specialists as and when required.

15.3.3 The private health sector in Rodrigues is almost non-existent, with only two private pharmacies operating in Port-Mathurin. Many Rodriguans travel to Mauritius and other parts of the world for treatment in the private sector.

15.4 Health Status

15.4.1 Rodrigues has experienced significant health gains since the past few decades. This is evidenced by the increasing life expectancy of its population and improved maternal and child health indicators. At present, life expectancy at birth for males is 71.5 years, whereas for females it is 76.6 years.

15.4.2 Infant mortality rate (IMR) per thousand live births which was 34.9 in 1990 declined to 13.6 per thousand live births in 2015. The under-five mortality rate per thousand live births has also significantly improved. It declined from 41.1 per thousand live births in 1990 to 23.4 in 2012.

15.4.3 The Expanded Programme on Immunization covers almost 100% of the targeted child population. Improvement in the maternal and child health indicators shows that Rodrigues is on the right track towards attaining the health- related UN Millennium Development Goals.

15.5 Constraints and Challenges

15.5.1 Since the past few years there has been major health infrastructural development in Rodrigues. The rationale behind this development has been to meet increasing demand of services by the population, to provide new services and to replace old buildings by new ones. The setting up of the new maternity ward, the upgrading of the existing operation

block to accommodate a new operating theatre at the QEH, the upgrading of Mont Lubin AHC to provide additional services to the community and minor upgrading works at the level of community health centres are some examples of positive change.

15.5.2 Significant capital has been invested to construct the new maternity ward at QEH. Since its commissioning some three years ago, the new infrastructure remains underutilized. More than 50% of space in the new building is unoccupied. Besides in 2012 the bed occupancy rate at QEH was 58%, which is well below the normal desired rate of 70%.

15.5.3 In spite of that Mont Lubin and La Ferme Area Health Centres providing inpatient services, patients prefer to be admitted and treated at the main hospital of the island. For this reason, the bed occupancy ratio at these two health facilities is extremely low. In 2012 La Ferme Area Health Centre had a bed occupancy rate of 21.7% and that at Mont Lubin AHC was 31.9%.In 2012, Mont Lubin and La Ferme AHCs recorded only 8 and 7 deliveries respectively.

15.5.4 The health gains of the past few decades in Rodrigues are also being threatened by the rising incidence of non-communicable diseases, namely diabetes, hypertension and cardiovascular diseases. In 2012 out of 240 deaths, 32.9 % were attributed to diseases of the heart and other circulatory diseases while 18.8 % deaths occurred due to diabetes and other endocrine, nutritional and metabolic diseases.

15.5.5 According to the 2009 NCD Survey for Rodrigues, the prevalence of diabetes among people aged 20 to 74 years was between 14.3% for male and 13.3% for female. Control of diabetes among those who were already diagnosed was poor. 59% of patients were controlling their diabetes. The 2009 NCD survey also revealed that the prevalence of hypertension in adults aged 20-74 years was high at 40.2% - higher among male at 43.3% than female at 37.9%.

15.5.6 Prevalence of hypertension in Rodrigues is higher than in Mauritius. The contributory factors are the increasing intake of saturated fat, alcohol, cigarettes and reduced physical activity. To cite from the MDG SNR 2003 Report, '*Rodrigues has currently the highest rate of persons suffering from hypertension in the world*.' End of citation.

15.5.7 In 2009, obesity was present in 29% of the population aged 20-74 years in Rodrigues. 37.5% of inhabitants in Rodrigues are overweight. The prevalence of smoking among male was 40.9% and for female it stood at less than 5%. Another risk factor for NCDs in the island is lack of physical activity. The 2009 NCD report indicates that only 17.3% of Rodriguan adults aged 25-74 were undertaking sufficient physical activity.

15.5.8 The ageing population also constitutes another challenge in Rodrigues. It is projected that the number of old people will increase from 2,425 in 2005 to 4,193 in 2025. The elderly will thus constitute more than 10% of the total population by 2025.

15.5.9 HIV and AIDS continue to threaten the health gains already achieved in Rodrigues. By the end of 2011, the total number of HIV infection cases registered was 50. It is also estimated that 100 HIV positive inhabitants of Rodrigues are living in Mauritius. For better coordination and monitoring of the epidemic, an AIDS Secretariat has been set up. Various sensitization campaigns are carried out on a regular basis in Rodrigues and there were more than 500 cases of voluntary testing carried out in the year 2011.

15.5.10 Various weaknesses have been identified in managing AIDS in the island. The first one is that as Rodriguans travel more it is expected that the number of HIV/AIDS cases will increase over years. Moreover adolescents between 14-24 years are regarded as a high risk group for HIV and AIDS, because of the high rate of pregnancy amongst young unmarried girls.

15.5.11 Despite the presence of NGOs and technical support from multilateral agencies and other partners, the HIV/AIDS programme is lacking momentum for a proper take off. Besides antiretroviral treatment is not provided and People Living with HIV and Aids (PLWHAS) seek treatment in Mauritius. Besides, Rodrigues is not spared from the resurgence of past infectious diseases and resurgence of new ones like H1N1. Expanding air traffic and the growing number of visitors, both Mauritian and foreign tourists, make the island vulnerable to these communicable diseases. So far Rodrigues does not have emergency preparedness plans to deal with the health hazards and other natural calamities due to climate change as well as managing high mass casualties from road accidents.

15.6 Agalega

15.6.1 Agalega consists of two islands (North Island and South Island). The twin Islands have a combined land area of 2600 hectares ($70km^2$). The North Island is 12.5 km long and 1.5 km wide and South Island is 7 km long and 4.5 km wide. The islands which lie 1100km (700miles) north of Mauritius (10°25′S, 56°35′E) have a combined population of 300. The capital ‘Vingt Cinq Village’ is located in the North Island and has a landing strip. The highest point of the islands is at Colline D'Emerez (North Island). One of its main exports is coconuts (Cocosnucifera) and its derivatives.

15.6.2 Health services are provided to the population of Agalega through a network of two health centres. One of the health care delivery institutions is located in the North of the Island with a catchment area of 200 people. The second provider of health services is

found in the South of Agalega and serves 100 inhabitants. Each of the two health centres is endowed with 10 beds.

15.6.3 The health manpower posted to Agalega comprises one medical officer, two nurses and support staff.

15.6.4 **Table XIV** below gives an indication of the situation concerning bed occupancy rate, outpatient and inpatient attendances in Agalega.

TABLE XIV: Bed Occupancy Rate, Outpatient and Inpatient Attendances in Agalega.

	HEALTH CENTRE (NORTH)	HEALTH CENTRE (SOUTH)
Bed Occupancy (Male)	4	4
Bed Occupancy (Female)	4	4
Average Daily Attendances	13	8
No of Admissions (Per Year)	108	12

15.6.5 In respect to **Table XIV,** it is estimatedthat there are some 7300 outpatient attendances at the two health centres in Agalega. The number of admissions is approximately to the order of 114 on an annual basis. Under existing arrangements, pregnant women have to come to Mauritius in their fifth month of pregnancy for delivery. On an average there are five deliveries every year. For the past five years there have been 25 deliveries, out of which 24 births took place in the main island of Mauritius and only one in Agalega.

15.6.6 On the overall the health status of the people of Agalega is good and is comparable to the health status of the population in the main island of Mauritius.

15.6.7 However, it is noted that Non-Communicable Diseases (NCDs), including diabetes, high blood pressure, respiratory tract infections, fish bites, alcohol dependency, trauma and psychiatric disorders are common among the adult population and remain the main causes of attendances and admissions in the island.

15.7 **STRATEGIC ACTIONS** are indicated in **BOX 11.**(***The population of Rodrigues and the Outer Islands will also benefit from strategic actions proposed for the island of Mauritius.)***

BOX 11

Core Actions (Rodrigues):

1. **Include Rodrigues in the Master Plan for Primary Health Care,**
2. **Formulate a Master Plan for infrastructural development - New Queen Elizabeth Hospital, Reorganisation at La Ferme and Mont Lubin Area Health Centres,**
3. **Include Rodrigues in E-Health project-Setting up of a Telemedicine Facility as a priority,**
4. **Introduce SAMU services in Rodrigues,**
5. **Setting up a Vaccination Centre for international travel,**
6. **Strengthen laboratory** facilities,
7. **Review delivery of NCD services,**
8. **Extend Cost Centre Project to Rodrigues.**

Core Actions (Agalega):

1. **Setting up of a telemedicine facility,**
2. **Provision of an additional medical doctor to Agalega for better medical coverage of both islands.**

Note: All the Strategic Actions for Rodrigues as mentioned above were agreed upon during a workshop held in Rodrigues. It was also agreed that the costs of implementing the strategic actions would be borne under the budget of the Rodrigues Regional Assembly.

CHAPTER 16: ESTIMATED BUDGET OF HEALTH SECTOR STRATEGY 2013-2017.

16.1 Estimated Budget of Health Sector Strategy 2013-2017

16.1.1 Health status is highly correlated with macroeconomic indicators such as per capita income, working conditions, unemployment, literacy level, poverty and environmental factors. The WHO Commission on Macroeconomics and Health (CMH) has portrayed with accurate evidence how investing in health contributes to economic growth and development.

16.1.2 Government will continue to sustain the provision of free health services to the population. For FY 2013, Government Expenditure on Health (GEH) amounts to Rs 8.7 billion**,** representing some 2.7% of Gross Domestic Product (GDP) and 8.8% of Total Government Expenditure (TGE). Per capita public expenditure on health is Rs 6,917.

16.1.3 The Health Sector Strategy 2013-2017 proposes ambitious projects to attain the desired health targets by 2017. The Strategy also incorporates projects in the Public Sector Investment Programme (PSIP) 2013-2017 and Government Programme 2012-2015.

16.1.4 Total estimated budget for the implementation of the Strategy amounts to Rs 13.2 billion and is aligned with the 2013 PBB 2013-2015 and the PSIP 2013-2017. Out of the Rs 13.2 billion, capital costs represent approximately Rs 11.8 billion.

16.1.5 The implementation of some of the new projects as described in the Strategy will include recurrent costs for the recruitment of additional manpower and to meet operational costs, which amount to Rs 1.4 billion.,

16.1.6 **TABLE XV** indicates various ways and means to raise additional revenue.

TABLE XV: Ways and Means to Raise Additional Revenue

Ways and Means to fund the Recurrent Funding Gap	2013 RS (Million)	2014 RS (Million)	2015 RS (Million)	2016 RS (Million)	2017 RS (Million)
1.COST RECOVERY MEASURES(ESTIMATED)					
1.1 Medicine Registration Fees	-	60,000,000	60,000,000	65,000,000	65,000,000
1.2Review of current fees for the sale of goods and services	-	30,000,000	30,000,000	40,000,000	40,000,000
1.3 Review payment schedule for tourists.	-	1,000,000	1,500,000	3,000,000	4,000,000
SUB TOTAL	-	**91,000,000**	**91,500,000**	**108,000,000**	**109,000,000**
2.EFFICIENCY GAINS					
2.1 Replacement of current provision of meals to staff on extended shifts with meal allowances.	-	21,000,000	21,000,000	21,000,000	21,000,000
2.2 Savings on overtime.	-	5,000,000	8,000,000	12,000,000	18,000,000
2.3 Savings on allowances.	-	6,000,000	13,500,000	18,000,000	23,000,000
2.4 Savings on overseas treatment.	-	5,000,000	10,000,000	18,000,000	30,000,000
SUB TOTAL	-	**37,000,000**	**52,500,000**	**69,000,000**	**92,000,000**
3. GRANTS/FUNDS FROM MULTILATERAL AGENCIES, incl. WHO BIENNIUM	-	**22,000,000**	**35,000,000**	**43,000,000**	**43,000,000**
GRAND TOTAL	-	**59,000,000**	**87,500,000**	**112,000,000**	**135,000,000**

16.1.9 For Rodrigues, implementation of capital projects for the period 2013-2017, is estimated at Rs 200 million. Estimated additional recurrent expenditure for the five year period is Rs 124 million. The estimated cost to set up a Community Hospital in Agalega is Rs 75 million.

CHAPTER 17: IMPLEMENTATION, MONITORING & EVALUATION PLAN

17.1 Implementation Plan

17.1.1 The Implementation Plan sets out steps that will be taken for the smooth and successful implementation of the 116 strategic actions of the Health Sector Strategy 2013-2017. The Plan identifies the different units/ departments of the Ministry of Health and Quality of Life which will be responsible to implement the strategic actions within specific delivery time frames and for evaluation and monitoring.

17.1.2 Health is an evolving sector. In order to address unforeseen circumstances, new opportunities and challenges that may arise over the next five years, the Health Sector Strategy 2013-2017 and the Implementation Plan will be revisited and updated.

17.2 Monitoring, Evaluation and Reporting

17.2.1 A comprehensive governance structure will be established to oversee and contribute to the implementation of the Health Sector Strategy 2013-2017. The key elements of the governance structure include the following:-

- Steering Committee
- Sub-Committees
- Planning& Implementation Unit
- Health Economics Unit

17.2.2 At the highest level of policy making and management, a Steering Committee will be set up. The Steering Committee will be chaired by the Senior Chief Executive of the Ministry of Health and Quality of Life. This Committee will play a key role in ensuring timely implementation of the strategic actions and oversee progress made in achieving targets. The Steering Committee will report regularly to the Minister of Health and Quality of Life.

17.2.3 Members of the Steering Committee will include, senior staff of both the administrative and technical cadres working at Headquarters Level, Regional Health Directors and managers, one representative from the Ministry of Finance and Economic Development and other stakeholders.

17.2.4 In addition, eleven Sub Committees will be set up. Each Sub Committee will be chaired by the respective Program Manager for each area of action. Sub Committees will comprise, *inter alia,* personnel involved in the direct implementation of the strategic actions and senior staff of the administrative and finance cadres, representatives of the Project Implementation Unit (PIU) and Health Economics Unit (HEU). Sub Committees will report to

the Steering Committee on how things are improving, ensure that projects are implemented in line with the time frame, resort to necessary remedial measures to deal with constraints or bottlenecks hindering the smooth implementation of projects and will provide the basis for report writing.

17.2.5 The Planning and Implementation Unit (PIU) will be mainly responsible to ensure the timely and cost-effective implementation of infrastructural projects. The Health Economics Unit (HEU) will support the implementation of all non- infrastructural projects and will also oversee progress towards outcomes and targets of the Health Sector Strategy 2013-2017.

17.2.6 Progress reports on the implementation of strategic actions will be submitted to the Steering Committee on a quarterly, six monthly and annual basis. The Health Economics Unit (HEU) will coordinate the process.

17.2.7 The Implementation Plan, as indicated in **TABLE XVI**, elucidates the different responsible units and senior officers for the implementation, monitoring and evaluation of the 107 strategic actions within the desired timeframe.

TABLE XVI: Timetable for the Implementation, Monitoring and Evaluation of Strategic Actions - Health Sector Strategy 2013-2017.

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
1	**PRIMARY HEALTH CARE**			
1.1	**Phased conversion of PHC Centres into prototype PHC institutions.**	Project Implementation Unit /Ministry of Public Infrastructure	Project Implementation Unit	December 2017
1.2	**Consolidation of PHC service as per WHO recommendations. (Primary Care Physician)**	Director Health Services (PHC) / Health Economics Unit	Director Health Services (PHC) / Health Economics Unit	December 2017
1.3	**Recruitment and strengthening capacity building for primary care physicians and allied staff.**	Human Resources Division/ Director Health Services (PHC)	Human Resources Division/ Director Health Services (PHC)	November 2016
1.4	**Reviewing and upgrading of the existing package of primary health care services.**	Director Health Services (PHC) / Health Economics Unit	Director Health Services (PHC)/Health Economics Unit	July 2015
1.5	**Dental services, including preventive dentistry and oral health promotion to be made available at all AHCs by 2016.**	Director Dental Services	Director Dental Services	December 2017
1.6	**Setting up of Local Health Committees to enhance community participation.**	Director Health Services(NCD)/ NCD & Health Promotion Unit	Director Health Services(NCD)/ NCD & Health Promotion Unit	July 2014
1.7	**Implement recommendations of Action Plan on Reproductive Health.**	Director Health Services(PHC) Chief Demographer	Director Health Services(PHC)& Demography Unit	July 2016
1.8	**Upgrading diagnostic facilities in all PHC centres.**	Project Implementation Unit/ Director Health Services(PHC)	Project Implementation Unit	December 2017
1.9	**Upgrading of existing community health centres**	Project Implementation Unit/ Ministry of Public Infrastructure	Project Implementation Unit	December 2017
1.10	**Construction of Medi Clinics and additional community health centres**	Project Implementation Unit/ Ministry of Public Infrastructure	Project Implementation Unit	December 2017

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
1.11	**Provision of Child Health Passport**	Director Health Services(PHC)	Director Health Services(PHC)	April 2014
2	**PUBLIC HEALTH**			
2.1	**Sustaining the implementation of the National Programme for the Prevention and Control of Communicable Diseases.**	Director Health Services(Public Health)/ DPS (Public Health)/ Communicable Diseases and Control Unit	Director Health Services(Public Health) / DPS (Public Health)/ Communicable Diseases and Control Unit	December 2017
2.2	**Aligning food safety regulatory framework in line with Codex Alimentarius.**	Director Health Services(Public Health)/ DPS (Public Health)/Health Inspectorate and Government Analyst Division	Government Analyst Division	December 2016
2.3	**Implementation of a National Food Safety Action Plan.**	Director Health Services(Public Health)/ DPS(Public Health)	Food Safety Division	May 2014
2.4	**Consolidating health sector responseto climate change within the framework of sustainable development.**	Director Health Services/ (Public Health)/ DPS (Public Health)/ Communicable Diseases and Control Unit	Communicable Diseases and Control Unit	December 2017
2.5	**Extending mobile services for occupational health activities to the public.**	Director Health Services/ (Public Health)/ DPS (Public Health)/ Occupational Health Unit	Occupational Health Unit	August 2014
2.6	**Amendment to the Public Health Act.**	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	December 2014
2.7	**Setting up and training of RRTS.**	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	July 2014
2.8	**Training in HACCP.**	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	Director Health Services/ (Public Health)/ DPS (Public Health)/Principal Health Inspector	December 2014

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
2.9	**Procurement of equipment measure noise and odour nuisances.**			
3	**HIV AND AIDS**			
3.1	**Reinforcing sensitization campaigns to achieve positive behavioural change**	Director Health Services (HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	December 2017
3.2	**Formulation of a National Drug Control Master Plan on Harmful Use of Alcohol and Drugs**	Director Health Services (HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	October 2014
3.3	**Minimizing the transmission of HIV among IDUs by scaling up harm reduction strategies**	Director Health Services (HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit/NGOs	AIDS Unit	December 2016
3.4	**Extending sentinel surveillance of HIV and AIDS**	Director Health Services (HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit	AIDS Unit/Virology Laboratory	December 2016
3.5	**Scaling up HIV testing, treatment, care and support services**	Director Health Services (HIV and AIDS) / DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	December 2016
3.6	**Private health institutions to collaborate in the treatment of PLWHAs**	Director Health Services(HIV and AIDS) & DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	December 2016
3.7	**Implementing the National Multi Sectoral HIV and AIDS Strategic Framework (2012 -2016) in consultation with all stakeholders**	Director Health Services(HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	December 2016
3.8	**Decentralizing treatment of PLWHAs to all five Health Regions.**	Director Health Services(HIV and AIDS)/ DPS (HIV and AIDS) /AIDS Unit	AIDS Unit	December 2014
4	**NON- COMMUNICABLE DISEASES & HEALTH PROMOTION**			
4.1	**Set up a high level inter-sectoral Task Force to drive measures for the prevention and control of NCDs in particular, through addressing the social determinants of NCDs**	Director Health Services (PHC /NCD)	Director Health Services (PHC /NCD)	December 2013

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
4.2	**Develop and implement a National Health Literacy Framework.**	Director Health Services (PHC /NCD)/NCD & Health Promotion Unit	NCD& Health Promotion Unit	December 2014
4.3	**Continued implementation of Action Plans on NCDs and their risk factors such as the National Action Plan on Physical Activity and Nutrition, the Tobacco Control Action Plan, the Action Plan for Cancer Control and Prevention and the National Service Framework for Diabetes.**	Director Health Services (PHC /NCD)/ NCD & Health Promotion Unit/Consultant(Cancer)/Chief Nutritionist	Director Health Services (PHC /NCD)/ NCD & Health Promotion Unit/Consultant(Cancer) /Chief Nutritionist	December 2017
4.4	**Intensify capacity building of health care staff for prevention and control of NCDs**	Human Resources Division /Director Health Services (NCDs)/NCDs &Health Promotion Unit	Human Resources Division /NCDs &Health Promotion Unit	December 2017
4.5	**Develop and implement a population based strategy for Salt Reduction**	Director Health Services (PHC /NCD)/ Chief Nutritionist	Chief Nutritionist	December 2017
4.6	**Develop and Implement a diabetes prevention programme.**	Director Health Services (PHC /NCD)/ NCD & Health Promotion	Director Health Services (PHC /NCD)/ NCD & Health Promotion	December 2017
4.7	**Enhance community participation in health promotion activities, including prevention programmes and intensify mass media campaign on NCDs**	Director Health Services (PHC & NCDs) /NCD & Health Promotion Unit	NCD & Health Promotion Unit	December 2017
4.8	**Formulate and implement an Action Plan on Harmful Use of Alcohol.**	Director Health Services (PHC /NCD)/ NCD & Health Promotion	Director Health Services (PHC /NCD)/ NCD & Health Promotion	December 2017
4.9	**Develop and implement a National Digital Mammography Screening Programme. and a National Systematic Cervical Screening Programme.**	Director Health Services (NCD)/ DPS (NCD)/NCDs &Health Promotion Unit	NCDs &Health Promotion Unit	December 2017

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
4.10	**Develop a robust NCDs Surveillance System which will enable monitoring and evaluation of programme.**	Director Health Services (NCDs) DPS (NCDs)/NCDs &Health Promotion Unit	NCDs &Health Promotion Unit	December 2014
4.11	**Revamp the School Health Programme into a Student Health and Wellness Programme**	Director Health Services (NCDs) DPS (NCDs)/NCDs &Health Promotion Unit	NCDs &Health Promotion Unit	April 2014
4.12	**Consider the introduction and implementation of an immunization programme against cervical cancer**	Director Health Services (NCDs) DPS (NCDs)/NCDs &Health Promotion Unit	NCDs &Health Promotion Unit	April 2014
5	**HOSPITAL SERVICES**			
5.1	**Setting up a National Centre for Clinical Excellence and Clinical Auditing at the Mauritius Institute of Health.**	Mauritius Institute of Health	Health Economics Unit	December 2015
5.2	**Developing Master Plans for Regional Hospital.**	Project Implementation Unit/ Director Health Services (Curative Services)/DPS (Curative Services)/ Ministry of Public Infrastructure	Project Implementation Unit / Health Economics Unit	August 2015
5.3	**Feasibility study on construction of a new multi- storey building for inpatient and support services at Victoria Hospital.**	Project Implementation Unit / Director Health Services (Curative Services)/DPS (Curative Services)/ Ministry of Public Infrastructure	Project Implementation Unit&/Health Economics Unit	December 2014
5.4	**Setting up modern infrastructures for Ear, Nose and Throat Services**	Project Implementation Unit /Director Health Services (Curative Services)/DPS (Curative Services)/ Ministry of Public Infrastructure	Project Implementation Unit	December 2016
5.5	**Develop SubramaniaBharati Eye Hospital into a Centre of Excellence for Ophthalmology.**	Project Implementation Unit /Director Health Services (Curative Services)/DPS (Curative Services)/ Ministry of Public Infrastructure	Project Implementation Unit	December 2016
5.6	**Strengthening support services through the construction of a National Health Laboratory Services Centre.**	Project Implementation Unit /Director Health Services (Curative Services)/DPS (Curative Services)/ Ministry of Public Infrastructure	Project Implementation Unit	December 2017 +

STRATEGIC ACTIONS		LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
5.7	**Formulation and implementation of Frameworks on Cardiology services and Mental Health Services.**	Director Health Services (Curative Services)/DPS (Mental Health)	Director Health Services (Curative Services)/DPS (Mental Health)	December 2014
5.8	**Strengthening support services through the construction of a mid-way home for the rehabilitation of inmates presently being cared at Mental Health Care Centre.**	Project Implementation Unit /DHS &DPS (Curative Services/Planning)/ MPI	Project Implementation Unit	December 2016
5.9	**Reorganization of the Accident and Emergency Services with respect to infrastructure and human resource.**	Project Implementation Unit /Director Health Services (Curative Services)/DPS (Curative Services)/Human Resources Division/Ministry of Public Infrastructure	Project Implementation Unit	December 2016
5.10	**Setting up of an Institute of Women's' Health**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2017+
5.11	**Setting up of a Geriatric Hospital.**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2014+
5.12	**Setting up of a Paediatric Hospital**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2017+
5.13	**Construction of new modern warehouse of international standard for pharmaceuticals.**	Director Health Services(Curative Services)/ Planning & Implementation Unit/ Ministry of Public Infrastructure	Project Implementation Unit	December 2017+
5.14	**Setting up of a new Cardiac Centre**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2016+

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
5.15	**Setting up of four additional wards at Victoria Hospital**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2015
5.16	**Setting up of a Community Hospital at Black River**	Project Implementation Unit /Director Health Services(Curative Services)	Project Implementation Unit	December 2016
5.17	**Strengthening support services through the construction of an Orthopaedic Centre**	Project Implementation Unit /DHS &DPS (Curative Services/Planning)/ MPI	Project Implementation Unit	December 2017
6	**PUBLIC PRIVATE PARTNERSHIP**			
6.1	**Introducing the Private Finance Initiation (PFI) for the setting up of public health infrastructure.**	Health Economics Unit/ Project Implementation Unit / Director Health Services (curative Services)	Health Economics Unit/ Project Implementation Unit	December 2017
6.2	**Outsourcing services to the private sector, through open bidding process and contractual agreements**	Procurement Unit	Procurement Unit	December 2017
6.3	**Undertake an assessment needs on PPP in health.**	Health Economics Unit	Health Economics Unit	July 2014
6.4	**Purchase high tech imaging services like CT scan and MRI from the private sector through open bidding process and contractual agreement.**	Procurement Unit	Procurement Unit	December 2017
6.5	**Enhance partnership with both local and foreign private health institutions and the pharmaceutical industry for capacity building and continuing professional development.**	Human Resource Division/Research and Training Unit/ Ag. Director Pharmaceutical Services/Health Economics Unit	Ag. Director Pharmaceutical Services/ Health Economics Unit	December 2017

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
6.6	**Rationalize Government funding to NGOs to ensure greater accountability and transparency.**	Health Economics Unit	Health Economics Unit	August 2014
6.7	**Introduce the Hospital Franchising Model (HFM) on a pilot basis subject to favourable economic analysis.**	Health Economics Unit/Planning & Implementation Unit/ Director Health Services (curative Services)	Health Economics Unit/Planning & Implementation Unit/ Director Health Services (curative Services)	December 2017
7	**HUMAN RESOURCES & CAPACITY BUILDING**			
7.1	**Develop Master Plan on Human Resource Health Plan (HRHP).**	Human Resource Division/Health Economics Unit	Human Resource Division/Health Economics Unit	August 2014
7.2	**Revamp the Central School of Nursing by integrating it with the MIH**	Director Health Services (Research /Training / Medical Education)	Director Health Services (Research /Training / Medical Education)	July 2014
7.3	**Review the managerial structure at the level of Regional hospitals.**	Human Resource Division/Health Economics Unit	Human Resource Division/Health Economics Unit	August 2015
7.4	**Introduce a new system for coverage in Accident and Emergency departments.**	Director Health Services (Curative Services)/DPS (Curative Services)	Director Health Services (Curative Services)/DPS (Curative Services)	July 2014
7.5	**Undertake an assessment on human resources for health.**	Human Resource Division/Health Economics Unit	Human Resource Division/Health Economics Unit	March 2014
7.6	**Set up an HRH observatory.**	Human Resource Division/ Health Economics Unit	Human Resource Division/ Health Economics Unit	August 2014
7.7	**Implement a Registrar Scheme for medical personnel in a phased manner**	Director General Health Services/Director Health Services (Curative Services)/Human Resource Division	Human Resource Division	August 2014
7.8	**Introduce re-validation process for continued registration of doctors with Medical Council of Mauritius.**	Medical Council of Mauritius.	Medical Council of Mauritius.	July 2014

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
7.9	**Implement a scheme for specialist in paediatrics, obstetrics, gynaecology and anaesthesia to be on duty rather than on call.**	Director General Health Services/Director Health Services (Curative Services)/Human Resource Division	Human Resource Division	August 2014
8	**RESEARCH,TRAINING AND MEDICAL EDUCATION**			
8.1	**Develop a Directorate of Education, Research and Training.**	Senior Chief Executive/Director General Health Services	Mauritius Institute of Health	August 2014
8.2	**Make a comprehensive survey on medical education and formulate a plan of action to address the production of doctors.**	Director Health Services (Research /Training / Medical Education)	Mauritius Institute of Health	November 2014
8.3	**Signing of a Memorandum of Understanding with University of Mauritius to address relevant ERT needs, including Continuing Professional Development.**	Director Health Services (Research /Training / Medical Education)	Mauritius Institute of Health	June 2014
8.4	**Strengthen capacity of Mauritius Institute of Health**	Director Health Services (Research and Training)	Mauritius Institute of Health	December 2015
8.5	**Medical Council Act to be amended to make CPD mandatory.**	Director General Health Services/ Human Resource Unit	Medical Council	May 2014
8.6	**Undertake an assessment of nursing education in the country and make recommendations.**	Director Nursing services/ Human resource Division/Mauritius Institute of Health	Mauritius Institute of Health	July 2014
8.7	**Memorandum of Understanding with University of Mauritius to include nursing education and training.**	Director Health Services (Research /Training / Medical Education)/ Human Resource Unit/Director Nursing services	Director Nursing Services	July 2014
8.8	**Continuing Professional Development (CPD) to be made mandatory**	Director Nursing services	Human Resource Division	February 2014
8.9	**Nursing Council Act to be amended to make CPD mandatory.**	Director Nursing Services/ Human Resource Unit	Director Nursing Services/ Human Resource Unit	May 2014

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
8.10	**Constitution of a Health Professionals Council**	Director General Health Services/ Human Resource Unit	Director General Health Services/ Human Resource Unit	December 2013
9	**GOVERNANCE**			
9.1	**Revisit the management structures of the public health institutions.**	Director General Health Services & Ag Permanent Secretary/ Human Resource Division	Human Resource Division	July 2014
9.2	**Set up a Monitoring and Evaluation Unit to ensure that the targets set by the Ministry, including those in the PBB are met.**	Health Economics Unit	Health Economics Unit	August 2014
9.3	**Further decentralize support services.**	Director General Health Services & Ag Permanent Secretary	Director General Health Services & Ag Permanent Secretary	December 2013
9.4	**Implement the E- Health Plan.**	Director Health Services (Planning)/Ag. Permanent Secretary/ Ministry of Information & Communication Technology	Director Health Services (Planning)/Ag. Permanent Secretary	December 2017
9.5	**Enhance the quality of patient contact at service point.**	Director Health Services (Curative Services)/DPS Curative Services)	Director Health Services (Curative Services/DPS(Curative Services)	December 2014
9.6	**Develop an effective auditing mechanism to make the health system more robust**	Mauritius Institute of Health	Mauritius Institute of Health	December 2015
9.7	**Institutionalize the development of National Health Accounts**	Health Economics Unit	Health Economics Unit	December 2014
9.8	**Review outdated legislations and develop new ones in response to emerging health and medical challenges.**	Director General Health Services/Ag. Permanent Secretaries/Director Health Services	Director General Health Services/Ag. Permanent Secretaries	December 2016

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
9.9	**Implement Cost-Centre Project in the five Regional Hospitals and all specialized health institutions.**	Health Economics Unit	Health Economics Unit	December 2014
9.10	**Implement the Anti-corruption framework**	DPS (Planning)	DPS (Planning)	May 2014
9.11	**Formulate and implement safety and health policy to ensure maximum compliance with the health and safety regulations;**	DPS (Public Health)	DPS (Public Health)	July 2014
9.12	**Capacity building for key administrative and technical cadres in management development programmes such as, Total Quality Management, Programme Based Budgeting, Performance Management System, Hospital Economics and Management.**	Human Resource Division	Human Resource Division	December 2016
9.13	**Introduce clinical audit system and quality criteria to ensure benchmarking and good quality of care.**	Director Health Services(Curative)	Director Health Services(Curative)	December 2014
10	**MEDICAL HUB**			
10.1	**Elaboration of appropriate regulatory framework for accreditation of hospital services**	**Director Health Services (Curative)**	**Director Health Services(Curative)**	**December 2014**
10.2	**Regional Hospitals and specialized health institutions to be converted into teaching hospitals**	**Planning & Implementation Unit**	**Planning & Implementation Unit**	**December 2016**
10.3	**Develop Website on medical travel tourism.**	**Health Economics Unit/CISD**	**Health Economics Unit/CISD**	**May 2014**
10.4	**Consider development of a Medical hub at a centralised location.**	**Planning & Implementation Unit**	**Planning & Implementation Unit**	**December 2016**

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
11	**RODRIGUES AND OUTER ISLANDS**			
11.1	**PRIMARY HEALTH CARE**			
11.1.1	Include Rodrigues in the Master Plan for Primary Health Care	Director Health Services (PHC)/ Health Economics Unit	Director Health Services (PHC)/ Health Economics Unit	December 2014
11.1.2	Rearrange ward spaces at La Ferme and Mont Lubin AHCs.	Commission for Health	Commission for Health	December 2014
11.1.3	Set up a Vaccination Centre for international travel.	Commission for Health/DPS (Public Health)	Commission for Health	December 2014
11.1.4	Strengthen laboratory facilities for infectious diseases	Consultant-in Charge Laboratory Services/ Commission for Health	Consultant-in Charge Laboratory Services/ Commission for Health	July 2014
11.2	**NCD AND HEALTH PROMOTION**			
11.2.1	Review delivery of NCD services	Commission for Health	Commission for Health	December 2014
11.2.2	Constructive engagement with NGOs.	Commission for Health	Commission for Health	December 2014
11.2.3	Construction of Health tracks	Commission for Health	Commission for Health	December 2016
11.3	**HOSPITAL SERVICES**			
11.3.1	Audit of equipment/vehicles.	Commission for Health	Commission for Health	December 2014
11.3.2	Setting up of a Telemedicine Facility	Commission for Health	Commission for Health	December 2016
11.3.3	Formulate Master Plan for infrastructural development	Commission for Health	Commission for Health	December 2015
11.3.4	Developing a SAMU service	Director Health Services (Curative)/Commission for Health	Director Health Services (Curative)/ Commission for Health	December 2015
11.3.5	Extending Cost Centre Project to Rodrigues.	Heath Economics Unit	Heath Economics Unit	August 2014
11.4	**HUMAN RESOURCES AND TRAINING**			
11.4.1	Exploring more opportunities for Continuing Professional Development (CPD) according to local needs/Attendances at international training workshops.	Director General Health Services/Mauritius Institute of Health/ DPS (Training)	Director General Health Services/Mauritius Institute of Health/ DPS (Training)	December 2016
11.4.2	Reviewing of existing infrastructure and staff complement	Commission for Health	Commission for Health	December 2014

	STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR IMPLEMENTING STRATEGIC ACTIONS	LEAD RESPONSIBILITIES FOR MONITORING/ EVALUATION	DATE LIMIT
11.5	**REPRODUCTIVE HEALTH**			
11.5.1	**Formulate and implement Action Plan in line with recommendations of Survey on teenage pregnancies.**	**Chief Demographer Commission for Health**	**Chief Demographer Commission for Health**	**December 2014**
11.6	**AGALEGA**			
11.6.1	**Construction of a Community Hospital**	**MPI & Outer Island Development Corporation**	**MPI & Outer Island Development Corporation**	**December 2016**

ANNEX 1

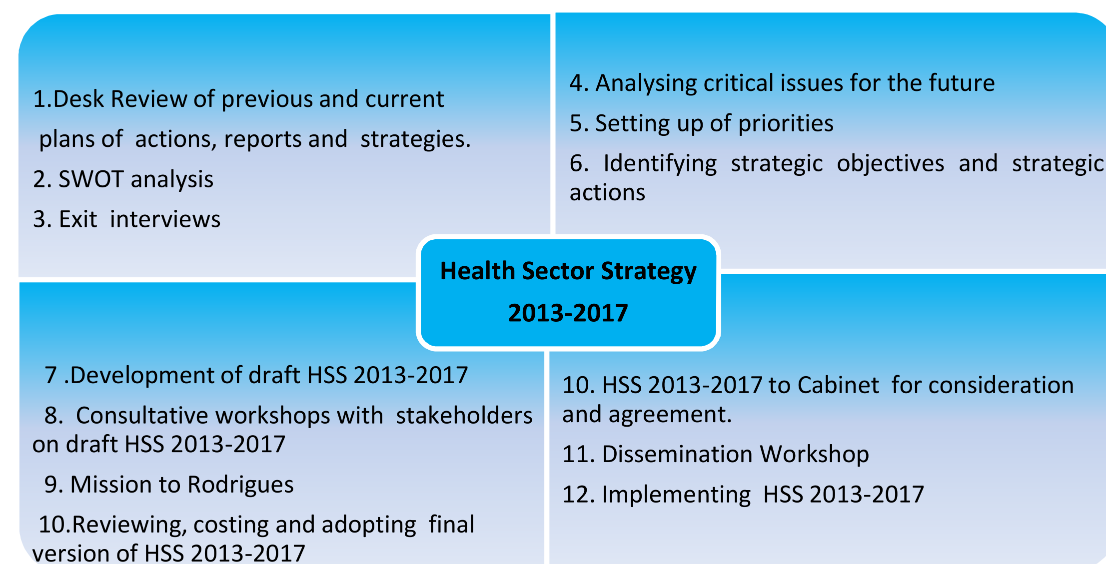
METHODOLOGY

1. At the request of the Ministry of Finance and Economic Development (MOFED) and the African Development Bank (ADB), the Ministry of Health and Quality of Life initiated the process of preparing in 2011 its Health Sector Strategy (HSS) 2013-2017.

2. For the smooth and successful formulation of this strategic document, a Health Sector Strategy (HSS) Team was set up. The Team was made up of the Director General Health Services, Director Health Services (Primary Health Care and NCD) and the Principal Health Economist, the Lead Health Analyst, two Permanent Assistant Secretaries and support staff.

3. In addition, a Steering Committee chaired by the Supervising Officer/Senior Chief Executive and comprising members of the HSS Team was set up to ensure timely and successful development of a coherent Strategic Plan for a five year period (2013-2017).

4. Agreement was reached by the HSS Team on the methods and approaches to be used in the undertaking and completion of the task and on what the final product, that is, the, HSS 2013-2017 would look like and what it would contain. A methodical step-by-step approach was adopted to produce the desired outcome. The illustration below provides an overview of the methodological process used to develop the HSS 2013-2017.



5. **Desk Review of Previous and Current Plans of Actions, Reports and Strategies:** A large volume of evidence-based information, including existing survey reports and relevant studies were retrieved from 'off-the-shelf' records of the Ministry of Health and Quality of Life. A list of these documents is included in "References".

6. **SWOT Analysis:** SWOT is an abbreviation for Strengths, Weaknesses, Opportunities and Threats. The SWOT analysis has been an important tool for assessing the overall strategic positions of the public health sector. The Ministry of Health and Quality of Life undertook an in-depth situational analysis to identify its strengths, weaknesses, opportunities and threats and to consider its capacity to meet the proposed strategic actions. The SWOT analysis has been useful for addressing the situational analysis, challenges and opportunities of each core chapter of this document.

7. **Exit Interviews:** Primary data collection for the assessment was mainly undertaken through non-stochastic surveys based on deterministic sampling, that is, the deliberate selection of respondents. These respondents were considered to be the major players in the national health system. In the category of the non-stochastic surveys undertaken, there were key informant interviews, focus group discussions and exit interviews.

8. **Analysing Critical Issues for the Future**: Following the Desk Review, SWOT Analysis and Exit Interviews, the HSS Team made critical decisions about what its main strategic objective and various strategic actions would be for the next five years do deal with the constraints and challenges facing the health sector and within the context of the social and welfare policies of Government.

9. **Setting up of Priorities:** The next step was to set up priorities for the HSS 2013-2017, viz primary health care, hospital services, non-communicable diseases and health promotion, HIV and AIDS, public health, public and private partnership, medical hub, human resources and capacity building, governance, training, education and research. The HSS team also agreed to include a separate chapter on Rodrigues.

10. **Identifying Strategic Objectives and Strategic Actions:** Once priorities identified, the strategic objectives and strategic actions for the next five years were defined.

11. **Development of Draft HSS 2013-2017**: A first draft document on the HSS 2013-2017 was formulated. The HSS Team re-assessed the various priority strategic actions proposed and reached general consensus on them in order to ensure that they were consistent with the vision and mission statement of the Ministry of Health and Quality of Life.

12. **Consultative Workshops with Stakeholders on Draft HSS 2013-2017**: The first draft document was tabled before all health stakeholders, both public and private, at a two-day workshop. Recommendations of the workshops were included in the HSS 2013-2017.

13. **Mission to Rodrigues:** A delegation led by the Director General Health Services was fielded to Rodrigues. The Commission for Health and other stakeholders were consulted in the process. A one-day workshop grouping all stakeholders was organized. The workshop culminated in fruitful deliberations and recommendations to be included in the chapter on Rodrigues and the Outer Islands.

14**. Reviewing, Costing and Adopting Final Version of HSS 2013-2017**: The document was thoroughly reviewed and modified in successive versions and its costing was made in line with the Programme Based Budgeting and the three year Medium Term Expenditure Framework (MTEF) rolling budget.

15. **HSS 2013-2017 to Cabinet for Consideration and Agreement**: The final version was approved by the Steering Committee chaired by the Senior Chief Executive of the Ministry of Health and Quality of Life. Financial clearance was sought from the Ministry of Finance and Economic Development, prior to its transmission to Cabinet for consideration and agreement.

16**. Dissemination Workshop**: The final adopted version of the HSS 2013-2017 as agreed by Cabinet will be disseminated to all stakeholders at a two day workshop both in Mauritius and Rodrigues, to ensure the smooth and successful implementation of the Plan.

17**. Implementing HSS 2013-2017**: The Ministry of Health and Quality of Life has committed itself to implementing the Strategic Plan through the collaboration and involvement of its staff at Headquarters and the Health Regions, with the support of other stakeholders and partners, with appropriate financial support from the Ministry of Finance and Economic Development and foreign partners and through public and private partnership. The implementation of the HSS 2013-2017 will be monitored and evaluated on a regular basis and will be adjusted and updated as and when required. It is highly likely that even during the early implementation phase, modifications to the Plan (and its funding mechanism) will be undertaken. Suitable flexibility and sensitivity will be required to implement the HSS 2013-2017.

18. **Costing Methodology**

18.1 The following have been taken into consideration for the costing of the Health Sector Strategy 2013-2017:

- The Public Sector Investment Programme (PSIP) which provides the framework outlining the way infrastructure investment decisions and policies are planned, financed and implemented. The PSIP comprises the five year (2013-2017) pipeline of investment projects for funding through government budgetary resources, state-owned institutions and development partners' loans and grants.
- Cost of on-going capital infrastructural projects, such as the New Dr. A.G. Jeetoo Regional Hospital at Port-Louis and the new Medi-Clinic project at PlaineVerte.
- Hospital construction cost, including architectural and engineering works, equipment and furniture – Rs 2.0 million per hospital bed.
- The three year rolling Programme Based Budget for FY 2013, FY 2014 and FY 2015, which includes both recurrent and capital expenditures.
- Consultation with the Ministry of Public Infrastructure, National Development Unit, Land transport and Shipping.
- Pay Research Bureau Report, 2012.
- Working sessions with officers of Ministry of Finance and Economic Development.
- Errors, Omissions and Anomalies Committee Report, March 2013.

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