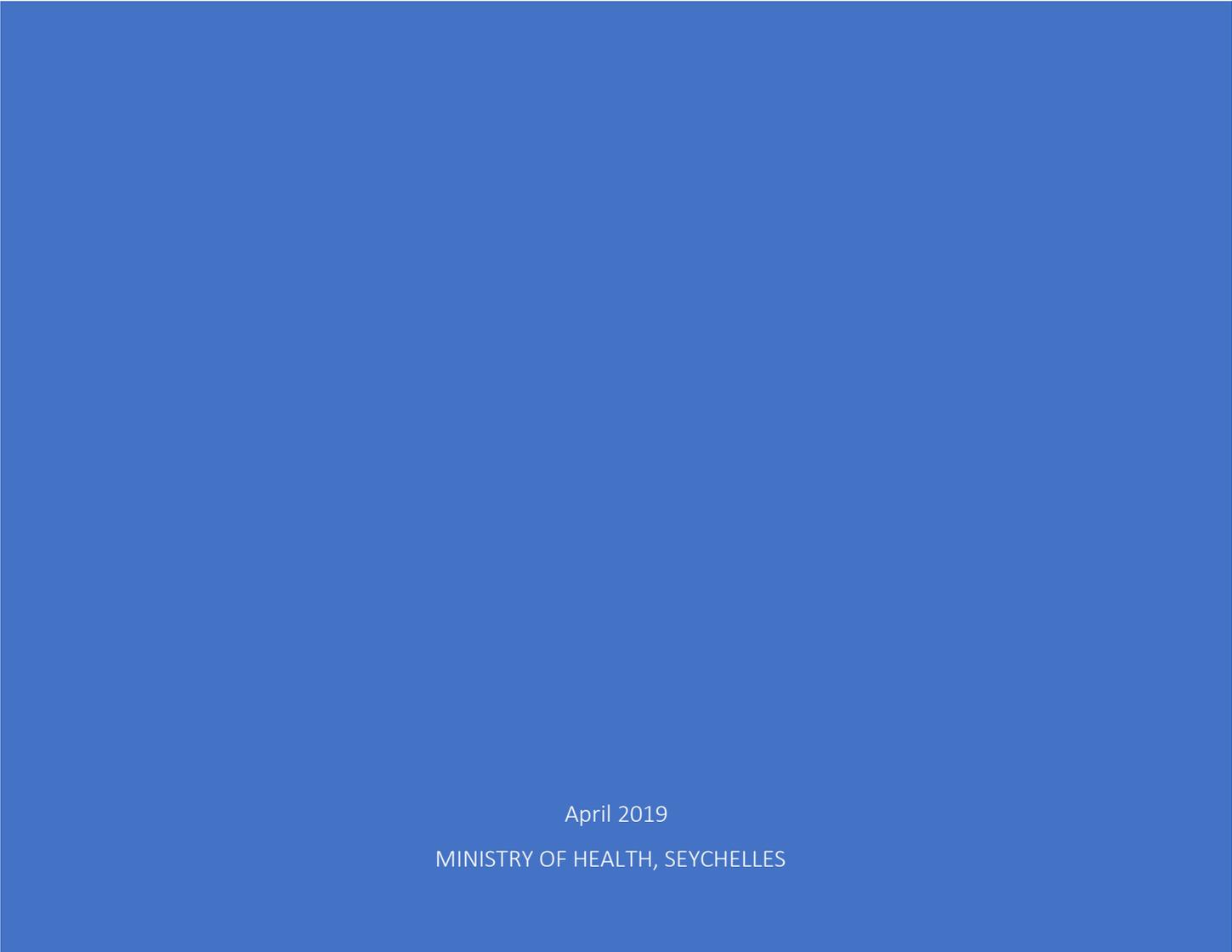




Health of our Nation
Annual Health Sector Performance Report, 2018



April 2019

MINISTRY OF HEALTH, SEYCHELLES

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ACRONYMS AND ABBREVIATIONS

APDAR	Agency for the Prevention of Drug Abuse and Rehabilitation
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	antenatal care
ART	antiretroviral therapy
ASFF	Alliance of Solidarity for Families
BP	blood pressure
CEO	chief executive officer
CVD	cardiovascular disease
COPD	chronic obstructive pulmonary disease
DPT3	3 doses of diphtheria-pertussis-tetanus vaccine
DSRU	Disease Surveillance and Response Unit
FP	family planning
FCTC	framework for convention on tobacco control
HBV	hepatitis B virus
HCA	Health Care Agency
HCV	hepatitis C virus
HIS	health information system
HIV	human immunodeficiency virus
HPC	Health Professionals' Council
HRH	human resources for health
IAEA	International Atomic Energy agency (IAEA)
IDSR	integrated disease surveillance and response
IHR	international health regulations
MOH	ministry of health

MMR	maternal mortality ratio
MTCT	mother-to-child transmission of HIV
NAC	National Aids Council
NBS	National Bureau of Statistics
NCD	non-communicable disease
NHSP	national health strategic plan
NIHSS	National Institute for Health and Social Studies
OECD	Organization for Economic Co-operation and Development (OECD)
PHA	Public Health Authority
PLWHA	people living with HIV/AIDS
PM&E	performance monitoring and evaluation
PWID	people who inject drugs
RA	readiness assessment
RMNCH	reproductive, maternal, new-born and child health
RTA	road traffic accident
SCAA	Seychelles Civil Aviation Authority
SCR	Seychelles Rupees
SDG	Sustainable Development Goal
SMDC	Seychelles Medical and Dental Council
SNMC	Seychelles Nurses and Midwives Council
TB	tuberculosis
UCCPD	Unit for Prevention and Control of Cardiovascular Diseases
UHC	universal health coverage
WHO	World Health Organization
WWP	workplace wellbeing programme (WWP)

Glossary

Life expectancy at birth: The average number of years that a new-born could expect to live if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory or geographical area.

Healthy adjusted life expectancy: Health-adjusted life expectancy (HALE) or healthy life expectancy is number of years that a person at a given age can expect to live in good health, taking into account mortality and disability.

Neonatal mortality rate: Probability that a child born in a specific year or period will die during the first 28 completed days of life if subject to age-specific mortality rates of that period, expressed per 1000 live births.

Under- five mortality rate: The probability of a child born in a specific year or period dying before reaching the age of 5 years, if subject to age-specific mortality rates of that period, expressed per 1000 live births

Infant mortality rate: The probability that a child born in a specific year or period will die before reaching the age of 1 year, if subject to age-specific mortality rates of that period, expressed as a rate per 1000 live births.

Maternal mortality ratio: The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, expressed per 100 000 live births, for a specified time period.

Perinatal Mortality rate: Combined number of deaths of babies aged less than 7 days and the number of still births in a year per 1,000 total births during the year.

Adolescent fertility rate: The number of births to women ages 15–19 per 1,000 women in that age group per year. This is a subset of Age Specific Fertility Rates.

Facility density: An indicator of outpatient service access which measures the number of facilities per 10,000 population

Health workforce density: Number of core medical professionals, including physicians, non-physicians, clinicians, registered nurses and midwives per 10,000 populations.

SUMMARY INDICATOR TABLE

Indicator	2018 data	NHSP Mid-term targets	Performance		
Health Status					
Life expectancy at birth (years)	M-68.5	M-73			
	F-77.4	F-79			
Maternal mortality ratio (per 100,000 live births)	121.2 (2 per 1650)	< 2 in 1600 births			
Neonatal mortality rate (per 1,000 live births)	14.6	< 6.25			
Infant mortality rate (per 1,000 live births)	18.8	< 10			
Under- five mortality rate (per 1,000 live births)	20.6	< 14			
Mortality (30-70 years) from cardiovascular diseases (%)	31.5%	< 50% of all deaths (1)			
Mortality (30-70 years) from cancer (%)	26.7%				
Mortality (30-70 years) from chronic respiratory diseases (%)	0.5%				
Mortality (30-70 years) from diabetes (%)	9.8%				
Mortality from road traffic accidents (% of total deaths)	1%	1%			
Intentional self-harm (number of cases)	78	127			
Mortality due to AIDS (% of total deaths)	2%	0.5%			
Leptospirosis case fatality rate (%)	6 deaths (2)	<15%			
HIV newly diagnosed cases	120	< 80			
STI newly diagnosed cases	806	350			
Viral hepatitis C new cases	87	< 130			
New cancer cases	222	< 134			
HIV prevalence (%) (3)	0.87%	< 0.5%			
Viral hepatitis C prevalence (%) among heroin users (4)	35.9%	< 0.5%			
Service coverage					
Coverage of women of child- bearing age on modern contraceptives	7564 (5)	60%			
Number of pap smears done	5766	10 000			
ANC coverage	99%	100%			
Immunization Coverage (DPT3 as part of Pentavalent)	99%	100%			
ART Coverage	72%	62%			
Patients on ART with viral suppression	91%	>95%			
HIV positive pregnant women provided with ART to reduce MTCT	100%	100%			

Notes: (1) Different target in National NCD Strategic Plan; (2) No verified data on total number of cases of leptospirosis; (3) HIV prevalence in the general population, KAPB study 2013; (4) APDAR. Seychelles biological and behavioural surveillance of heroin users, 2017; (5) Denominator unknown, data from private clinics missing.

Achieved ■ **On track** ■ **Not on track** ■

FOREWORD

The Annual Health Sector Performance Report 2018 is the second annual performance report published by the Ministry of Health. Its contents detail the progress made in advancing the range and quality of health care, and the improvement in the health of the Seychellois nation. Progress comes about from the investment in health, the dedication and professionalism of health workers, and the increasing engagement of individuals in the pursuit of better health. The Report is thus a reflection our collective efforts and shared vision. It is also a demonstration of the transparency and accountability to which the Ministry is committed, and our willingness to expose the inner workings of the health sector to scrutiny, critique and, I hope, continuing appreciation and support.

The quality of the Report itself has improved, as a result of the hard work of the team of health professionals who collect and analyse data, and present them in meaningful context. These offer a picture of the activities carried out throughout the year, and also permit the evaluation of performance and year on year progress.

As noted in the 2017 Report, achievements in health status and performance result not only from the work of the health services, but also from the contribution of other sectors. Attaining the target reduction in mortality from road traffic accidents, for example, is due to those who make roads safer and those who use them more safely, rather than only those who treat trauma. In a similar way, improving the coverage of immunisation reflects the awareness and commitment of parents, the collaboration of those who work in education, and efforts of the media to provide timely and accurate information. These two examples also highlight the important fact that, without continuing vigilance and collaboration, the gains made in reducing mortality from accidents and increasing vaccine coverage can so easily be reversed.

Reversal in life expectancy, and increased infant and maternal mortality presented in this report amplify this concern. Granted, small changes in numbers impact greatly on rates in a small population. But that is only part of the picture, and let's not forget that these are not just statistics but the life stories and tragedies of individuals and families. Improving health services will not have the desired impact on these measures unless the societal issues that contribute to risks and premature deaths are addressed. We need to start with a national dialogue, develop a greater understanding of the underlying issues, build the necessary resolve and define the action needed.

While there is much in the Annual Health Sector Performance Report to give us satisfaction with progress we are making, to alert us to areas where more effort needs to be focussed, it remains an incomplete account. Firstly, there remain gaps in service statistics data availability and coverage targets and rates. Secondly, until we are able to match and combine health statistics with financial data, including those from PPBB and the National Health Accounts, we cannot adequately evaluate efficiency, effectiveness and value for money. Thirdly, there is a paucity of information from the private health sector, an increasingly important contributor to the health of our nation.

Health will always be challenging. For those of us who serve in this sector, we are conscious of our shortcomings. We are also proud of our achievements. I hope you will find this Report interesting and useful, and as you read through it, I invite you to join me in expressing admiration and support for the work of our health professionals.

EXECUTIVE SUMMARY

The mission of the health sector is to relentlessly promote, protect and restore the health, quality of life and dignity of all people in Seychelles. During the last three years the Ministry of Health (MOH) has worked to achieve the goals laid out in the National Health Strategic Plan 2016-2020 (NHSP) and also global commitments like the Sustainable Development Goals (SDGs).

The objectives of this report are to demonstrate accountability of the health sector, report on 2018 performance and inform future policy decisions. To measure performance in 2018, this report looks at: health status; public health; risk factors; universal health coverage; health systems; and achievement of SDGs.

Health status

There were 1650 live births (832 Males, 818 Females) and 818 (470 Males, 348 Females) deaths in 2018. Compared to 2017, the crude birth rate decreased marginally, while the crude death rate increased compared to previous five years. Diseases of the circulatory system (32%) and cancer (19%) accounted for 51% of all deaths in 2018.

There was an increase in the number of maternal and infant deaths: two maternal and 31 infant deaths were reported compared to only one and 18 respectively for 2017. Life expectancy (LE) at birth for both sexes decreased to 72.7 years in 2018 - a decrease of more than one year from 74.3 years reported in 2017. Excess mortality was among infants and also in the age group 30-34 years.

Pneumonia was the primary or contributing cause of death in 20.8% of all registered deaths compared to 16% in 2017. Seychelles Hospital reported a total of 323 admissions with pneumonia, with a significant increase during the last quarter of 2018. Compared to 2017, suicide and AIDS mortality rates increased in 2018 to 10.3/100,000 and 19.6/100,000 respectively, while the number of deaths from road traffic accidents decreased from 11 in 2017 to nine in 2018.

Disease Surveillance

An outbreak of dengue was reported in 2015. Since then, the country has recorded new cases of the disease each year. From January to December 2018, a total of 2672 suspected cases of dengue were reported, an increase of 10% compared to 2017. Since the start of the outbreak, the cumulative number of suspected cases reported is 7047.

Risk factors

Several behavioural risk factors increase disease burden of both communicable and non-communicable diseases. Modifiable behavioural risk factors like smoking, insufficient physical activity, unhealthy diet and harmful use of alcohol all impact NCD disease burden. So do the

related proximal modifiable risk factors: increased body mass index; high blood pressure; high blood cholesterol; and elevated blood glucose.

The 2013 National Survey of NCDs among the Seychelles adult population aged 25-64 years, noted a downward trend for smoking, unchanged or slightly downward trends for high blood pressure and high blood cholesterol, but an upward trend for diabetes and obesity.

Data from the School Health Programme show that the prevalence of overweight or obesity in children aged 9-16 years (P4, S1 and S4) more than doubled, between 1998 and 2017.

Promoting and protecting health is one of five strategic investment priorities identified in the NHSP, and in 2018, MOH decided to implement a series of interventions: increase in excise tax on cigarettes; agreement on the introduction of a sugar tax; revision of the 2009 School Nutrition Policy; development of a National Comprehensive Cancer Control Plan; >3000 minutes of media programmes and appearances to promote health; implementation of a new national theme, *My Health, My Responsibility*; and launch of a Workplace Wellbeing Programme.

Universal Health Coverage (UHC)

The goal of UHC is to ensure that every individual and community, irrespective of their circumstances, receive the health services they need without risking financial hardship. UHC (SDG 3.8) underpins all other health-related SDGs.

All citizens in Seychelles can access health care free-of-cost at the point of use in public health facilities. The country has achieved high coverage for some essential services: coverage for childhood immunization and pre-natal care consultation have remained > 95% for several years; coverage of antiretroviral therapy increased from 62% in 2017 to 72% in 2018; while coverage for the prevention of mother-to-child transmission of HIV (PMTCT) was 100% in 2017 and 2018. Available data do not allow accurate measurement of coverage for some services like use of modern contraceptives. Additionally, lack of granular data is a barrier to analysis of equity and more efforts are needed to measure the quality of services.

Health systems

The health budget continues to increase every year and accounted for the largest share (11.7%) of the total public sector spending in 2018. Government expenditure on health as a share of GDP is still low at 4.4% compared to few neighbouring countries and most high-income countries, while out-of-pocket spending on health appears to be increasing.

In 2018, there was an increase in the number of registered health professionals for almost all health cadres. Seychellois, however, make up less than 30% of the medical workforce and 55 out of 66 nurses registered in 2018 were expatriates.

With the available human and financial resources, MOH has continued to improve access and utilization of services. In 2018, numbers of out-patient consultations, accident and emergency visits as well as in admissions to hospital were higher than in 2017. Diagnostic services also

experienced an increase in service usage: clinical laboratory performed 715 680 tests and the radiological Diagnostics Centre performed over 53,000 tests, with a significant proportion of utilisation happening after normal working hours. MOH also provides specialized services like haemodialysis and overseas treatment.

There is a need for quality data in the health sector for accountability and to inform decision making. Data are routinely collected and processed through the Disease Surveillance and Response Unit (DSRU), as well as the Statistics Unit. In 2018, MOH took its first steps to strengthen performance monitoring and evaluation (PM&E) in the health sector and work on the implementation of an electronic Health Information System is slowly progressing.

Achieving SDGs

SDG 3, *Ensure healthy lives and promote wellbeing for all at all ages*, is the goal with a core emphasis on health, and is well aligned with the MOH's vision and mission. Disease burden and health outcomes are influenced not just by what MOH delivers but also by the social determinants of health - the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices.

The country is well placed to achieve most of the SDG3 goals, however, for a few indicators there are signs that it cannot sustain major achievements secured in the past. This warrants root cause analysis with intersectoral debates and remedial actions.

1. INTRODUCTION



The health system consists of all the organizations, institutions, resources and people in country whose primary purpose is to improve the health of the people in Seychelles. The right to health is enshrined in the Constitution of Seychelles.¹ Article 29 underscores the commitment of the State for health care provision and also the responsibility of the citizen. The health sector is mandated to provide quality goods and services to clients for preventive, curative, rehabilitative, and palliative care.

Vision of Health in Seychelles: The attainment, by all people in Seychelles of the highest level of physical, social, mental and spiritual health and living in harmony with nature.

Mission of the Health Sector: To relentlessly promote, protect and restore the health and quality of life and dignity of all people in Seychelles, with the active participation of all stakeholders, through the creation of an enabling environment for citizens to make informed decisions about their health.

The Health Sector mission is translated into the principles of *Health for all, by all and in all*.

Health for all: The health sector places the well-being of the individual and the family at the centre of all efforts in the pursuit of social and economic development.

Health by all: The primary responsibility for health rests with each and every single individual and the individual's beliefs, attitudes and actions determine his or her health.

Health in all: The determinants of health are found in all sectors, permeating the economic, social, cultural and physical environments of people.

To achieve its vision and mission, the MOH has identified a number of key policy imperatives. These are designed to:

- strengthen integrated health care;
- promote and protect health;
- develop and sustain human resources for health;
- ensure sustainable financing for health;
- promote research and innovation; and
- develop partnership and participation.

The National Health Strategic Plan (NHSP) 2016-2020² lays out the health sector priorities, offers a unifying framework guiding the work of all the agencies within the MOH and beyond the ministry into the private sector. It provides a roadmap for achieving key national and global health targets. In line with the health sector's vision and mission, the main goals of the NHSP are:

- increased expectation of life at birth;

¹ Constitution of the Republic of Seychelles, 1994.

² Ministry of Health, Seychelles National Health Strategic Plan 2016-2020.

- reduced incidence, prevalence and mortality associated with priority non-communicable and communicable diseases;
- increased level of satisfaction of the people and of health professionals with the existing health services; and
- improved overall wellbeing of all people in Seychelles.

The country is signatory to the Sustainable Development Goals (SDGs) and the MOH is responsible for the implementation, follow-up and review of the progress made in achieving SDG 3 targets.

A set of core values guides all policies and implementation within the MOH:

- Caring
- Development
- Excellence
- Partnership
- Productivity
- People
- Professionalism
- Reward and team work

At all times, health care must be people-centred, respectful of fundamental human rights and dignity, including the rights of people to make informed choices and decisions and to participate in all aspects of their health care

(Core Value of the MOH)

Objectives of the report

The main objectives of the Annual Health Performance Report are to: demonstrate accountability of the health sector with the MOH at the centre of the sector; determine and give an account of the work done during 2018 and progress made towards reaching set NHSP targets and also global commitments e.g. SDGs and inform future implementation of the NHSP.

Intended audience

The target audience for this report is primarily national health policy makers at all levels of government and all health care providers. The report is also intended to inform legislators and the general public about the work done by the health sector, the achievements secured and the remaining gaps. The MOH has developed a communication kit to support wide dissemination of the report.

Process of report development

A group of people from all entities within MOH contributed to the development of this report and the process was led by the Office of the Principal Secretary for Health, Dr Bernard Valentin. The data used were compiled primarily from MOH data processing units for routine reporting – the Disease Surveillance and Response Unit (DSRU) and Statistics Unit; annual reports from different entities, programmes and units were also used.

2. GOVERNANCE AND LEADERSHIP



Good governance in the health sector is characterised by ‘...competently directing health system resources, performance and stakeholder participation toward the goal of saving lives and doing so in ways that are open, transparent, accountable, equitable, and responsive to the needs of the people. For health care interventions to work, countries need effective policy-making, transparent rules, open information and active participation by all stakeholders in the health sector’.³

This chapter looks at key achievements during 2018 against thematic areas as outlined in the NHSP:

- sector stewardship and management capacity;
- legal and regulatory framework;
- sector accountability;
- empowered civil society/community; and
- private sector participation;

The Minister is responsible for the political leadership of the health sector. The executive leadership of the MOH lies with the Principal Secretary, who heads the Secretariat. The Secretariat is responsible for: policy development; planning; monitoring and evaluation; and oversight and coordination of the implementation of health strategies by the three public bodies and the private sector responsible for health care provision. The Secretariat is also responsible for human resource development, health promotion and international cooperation.

The statutory entities under the purview of the MOH have the following mandates:

- Health Care Agency (HCA) to promote, protect and restore the health of the public;⁴
- Public Health Authority (PHA) to regulate health and provide protection of the population’s health; and
- National AIDS Council (NAC) to provide strategic guidance and coordination of HIV activities at the national level.

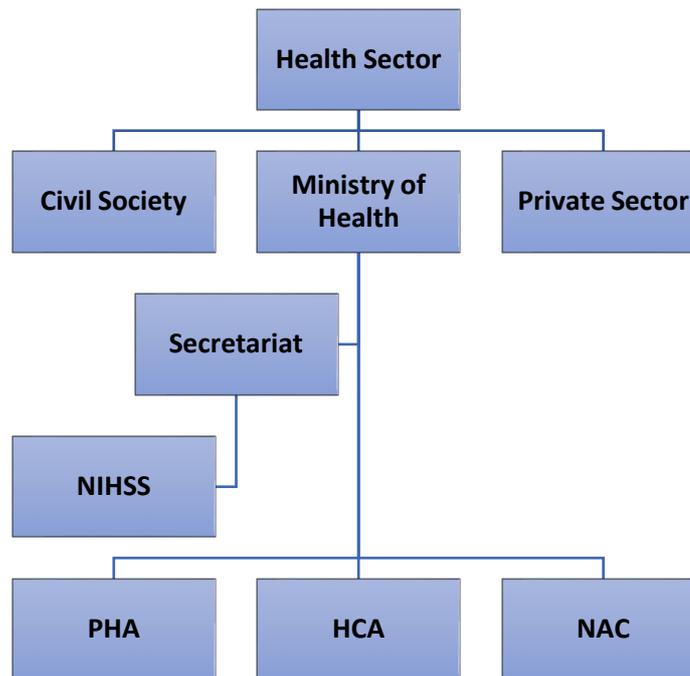
Executive leadership of the above entities lies with the Chief Executive Officers (CEOs) or the Public Health Commissioner in the case of the PHA. Strategic leadership is provided by the respective governing boards.

The National Institute for Health and Social Studies (NIHSS) is an academic entity that provides pre-service and in-service education of health care providers. The NIHSS falls under the aegis of the Secretariat.

³ Health Systems 20/20. 2012. The Health System Assessment Approach: A How-To Manual. Version 2.0. www.healthsystemassessment.org

⁴ Health Care Agency Act 2013, Section 4(1)

FIGURE 1. THE HEALTH SECTOR



2.1 KEY ACHIEVEMENTS/MILESTONES DURING 2018

Much work was done in 2018 to ensure efficient and effective implementation of the health agenda within a complex and evolving health sector.

2.1.1 SECTOR LEGAL AND REGULATORY FRAMEWORK

- Acts and other Statutory Instruments
 - The President assented to the Overseas Treatment Act in July 2018. The Act legalises the Overseas Treatment Programme which has been in existence since the early 1980s. Members of the Overseas Diagnosis and Treatment Board and Appeals Committee were appointed in August 2018. The Act came into effect in October 2018.
- Approval by Cabinet of Ministers was sought and obtained for the following:
 - Revised Policy on Adolescent Sexual and Reproductive Health
 - Revised School Nutrition Policy which provides a framework for implementing nutrition strategies to improve nutrition in schools thus positively support healthy eating habits in children. It also coordinates all aspects of nutrition in the curriculum, food provision and the school environment

- Mental Health Care Bill to repeal and replace the Mental Health Care Act 2006 which is currently with the Attorney General Office , as yet to be gazetted and presented to the National Assembly
- Several important pieces of legislation are currently at different stages of revision at the Office of the Attorney General.
 - Registration of Health and Health Related Practices Regulations as prescribed by the Public Health Authority Act.⁵ A first draft has been circulated for comments.
 - Temperature Control Regulations as prescribed by the Food Act ⁶ was presented and received Cabinet approval.
 - Pesticide Act (revision of the existing Pesticide Act 1996)
 - Seychelles Medicine Control Act which makes provisions for a fully operational Pharmacy Regulatory Unit.
 - Seychelles Nurses and Midwives Act (revision of the 1985 Seychelles Nurses and Midwives Act).
- The MOH updated the following policies:
 - Policy on Immunisation. This will be presented to Cabinet for approval in 2019
 - Blood Transfusion Policy: This will be presented to Cabinet after minor revisions
 - Policy on part- time private practice for nurses and midwives

2.1.2 SECTOR ACCOUNTABILITY

The MOH and its statutory entities appointed Information Officers as per Section 7 of the Access to Information Act 2018.

- Dissemination of 2017 Health Sector Performance Report

The MOH developed the Annual Performance Report for 2017. This work was led by the Office of the Principal Secretary for Health, Dr Bernard Valentin. Data from MOH routine reporting system were collated and analysed to measure progress made towards reaching set NHSP targets and also global commitments e.g. SDGs. The draft report was presented to an audience of around 70 middle and upper level health care managers for discussion, feedback and consensus building and the final report was disseminated to a multi-stakeholder audience

⁵ Public Health Authority Act 2013 - Act 7 of 2013, gazetted 28th October 2013

⁶ Food Act – Act 8 of 2004

during a one-day workshop. The Annual Performance Report for 2017 was disseminated within and beyond MOH.

- Political Accountability

The Minister for Health appeared before the National Assembly on several occasions:

April: to answer a Private Notice Question from the Leader of the Opposition on Haemodialysis Services, namely how the services provided by AMSA Renal Care in Seychelles Hospital compare with that of a new private service provider.

May: to make a declaration on the status of the health system. This declaration set the scene for the CEO of the Health Care Agency to brief the National Assembly on the Seychelles Hospital Master Plan.

The Minister for Health provided oral answers for four questions:

1. The Ministry's plans to improve transport services, in particular ambulance services
2. Whether the MOH has plans to allow nurses and midwives to engage in independent practice and as Nurse Practitioners
3. The status of the Decompression Chamber on Praslin
4. Whether the MOH is considering the introduction of basic health services e.g. Family Planning Services at Pointe Larue.

The Minister for Health also responded to an Urgent Question from the Member for Anse Royale on the rationale for identifying Anse Royale Hospital as a potential Isolation Unit. The Member further wanted clarity on whether the MOH is considering any alternative site away from densely populated areas for such a unit.

- Professional Councils in Health

The Health Professionals Council and the Seychelles Nurses and Midwives Council held elections for new Council members in 2018. The respective Board members were appointed by the Minister for Health as stipulated by the respective Acts.

Table 1 shows the number of health care professionals registered with the three health professional regulatory bodies: Seychelles Medical and Dental Council (SMDC), Seychelles Nurses and Midwives Council (SNMC), and Health Professionals Council (HPC).

TABLE 1. REGISTERED HEALTH CARE PROFESSIONALS, 2017 AND 2018

	New Registrations		Total on Registers as of 31 st December	
	2017	2018	2017	2018
Doctors	87	138	323	365
Dentists	16	19	61	68
Nurses	31	66	811	905
Midwives	0	8	328	324
Allied Health Professionals	64	19	583	658

Sources: SMDC, SNMC, HPC

All but four of the registered midwives are also trained nurses, and are thus included in the Nurses' count. In Seychelles, midwifery training is open to trained nurses only, whereas some other jurisdictions permit direct entry into midwifery programmes.

Although there were only 19 new registrations with the Health Professionals Council (HPC), a large number of delinquent professionals came forward to re-register and regularise their status in 2018. Among allied health professionals, Pharmacy Technicians (12%), Public Health Officers (11%), and Dental Surgery Assistants (11%) constitute the largest group.

As at 31st December 2018, there were 61 pharmacists registered with the HPC, of which only six are working in the public sector. The high number of registered pharmacists reflects on the one hand the boom in the private sector (22 registered private pharmacies), and on the other hand the high turnover of staff in private pharmacies.

Of the 61 registered dentists, 23 are employed in the public sector, three in administrative positions and 20 in active practice. Thirteen of the 323 registered medical practitioners are in public sector administrative positions and 174 in active practice.

Only 11 NIHSS graduates registered as nurses with the Seychelles Nurses and Midwives Council (SNMC) in 2018. The increased reliance of the country on expatriate nurses is reflected in the increasing number of foreign nurses registered with the Seychelles Nurses and Midwives Council (Table 2).

TABLE 2. NUMBER OF REGISTERED NURSES, 2013-2018

	2013	2014	2015	2016	2017	2018
No of newly registered local trained	15	23	18	19	11	11
No of newly registered foreign trained	3	5	13	22	20	55
No of newly registered nurses(total)	18	28	31	41	31	66

Source: SNMC

Monitoring

Monitoring and evaluation (M&E) is a powerful public management tool that can be used to improve the way governments and organizations achieve results. The introduction of a results-based M&E system takes decision makers one step further in assessing whether and how goals are being achieved over time. All entities and programmes within MOH undertake M&E activities. However, there are still many weaknesses

“Measurement is the first step that leads to control and eventually to improvement. If you can’t measure something, you can’t understand it. If you can’t understand it, you can’t control it. If you can’t control it, you can’t improve it.”

“H. James Harrington

with the collection, analysis, sharing and use of data. The Secretariat appointed a Steering Committee to lead the strengthening of PM&E activities. During the planning phase, a comprehensive readiness assessment was conducted. The findings were validated in a stakeholder meeting in October 2018. The readiness assessment has helped informed the next phases of PM&E strengthening.

2.1.3 EMPOWERED CIVIL SOCIETY/COMMUNITY

The list of health sector non-governmental organizations includes prominent organizations like Cancer Concern Association, HIV/AIDS Support Association, Seychelles Diabetes Society, and neophytes like Seychelles Stroke Foundation, Seychelles Alzheimer’s Foundation, Autism Seychelles and some others. Seychelles Patients Association was added to the list in 2015, at the same time as the surge of activity around person-centred care in the public health sector. The stated purpose of the Association is to amplify the patients’ voices on matters related to patient safety, health literacy and person-centred care. The Association has vowed to continue to add value to the work of the public health sector on these matters.

2.1.4 PRIVATE SECTOR CONTRIBUTION

True to its call for *Health for all, Health by all and Health in all*, the MOH recognises that it cannot fulfil its mandate to protect, promote and restore health alone. The MOH counts on participation of private sector organisations in its effort to improve the health and wellbeing of the population.

The contribution of the private sector under Corporate Social Responsibility Scheme amounted to SR 390,780.53 in 2018 (Table 3), representing only 17% of the SR 2,308,492.33 contributed in 2017.

TABLE 3. CORPORATE SOCIAL RESPONSIBILITY DONATIONS, 2018

Donors	Items donated	Value in SCR
GBM Trading Pty Ltd	Furniture for Maternity Unit	14,500.00
D'Offay Pharmacy	12 crutches	40,825.53
Mohan Shopping Centre	Christmas goods for children	3,000.00
Arc Distribution Pty Ltd	Hearing Aids items	147,375.00
International Food Solutions Pty Ltd	Milk powder and Cornflakes	85,000.00
Cat Cocos Inter-Island Ferry	Donation for cancer prevention	100,000.00
Total		390,780.53

Source: International Cooperation Unit MOH

2.2 REMAINING AGENDA

The Government proclamation for good governance, accountability and transparency across the public service (President of the Republic in the State of the Nation Address, 2017) and consequently across the public health sector, is coupled with the national imperative to attain the United Nations SDG to which Seychelles has invariably subscribed. The implementation of the National Health Policy and NHSP takes place within that framework and, as the current NHSP comes slowly to its end, the unfinished business relating to governance and leadership becomes more apparent.

Good governance implies also putting remarkable emphasis on efficiency, effectiveness, equity, and responsiveness of the public health sector. These pillars of good governance are currently not adequately measured and, as the adage goes, what does not get measured adequately does not get done adequately. More effort must be placed at institutionalizing measures for tracking these key “good governance” indicators. Structures and processes for measuring all aspects of the health efforts must be strengthened through and through. The health sector looks avidly to the governments *Results- Based Management* agenda to consolidate many of its own efforts.

As a corollary, the roles of the various autonomous health sector entities vis-à-vis the attainment of key targets inscribed in the national health strategic plan has not been self-evident. Whilst service agreements between the MOH (as the supervisory entity) and the various entities were meant to put clarity into the agency relationship, there has been little or no steadfast determination to formalize such service agreements. With the ever more vacillating progress towards the nationally and internationally prescribed targets, it will be imperative, going forward, to leave no room for ambiguity in the roles of all parties involved in the concerted effort.

Any attentive observer will notice that, currently, many forces in the Seychelles society are pushing and shoving for all sorts of new health care delivery models. Utilization of private health practices is increasing exponentially but utilization of public health services is not decreasing at all. It is incumbent upon the health sector leadership to understand the current

health and social care dynamics. It is even more incumbent upon it to understand the political, economic, environmental and technological context and use the evidence at hand (or seek added evidence) to design an appropriate new model of health care for Seychelles. Consensus policies, legislations and professional approaches that are both innovative and fit-for-purpose are needed to strengthen all areas of the health system.

The quality of the human resources for health (HRH) remains a major stumbling block of the health sector. An updated human resource policy, a strategic plan, an operational plan and a monitoring and evaluation framework that take into consideration the current disease pattern and the national and international obligations of Seychelles need to be formulated as a matter of urgency.

These need to also address strategies linked to the production, retention, deployment, continuous professional development and regulation of human resources for health. Although prominent in the 2016-2020 National Health Strategic Plan, during the course of implementation of that plan, other priorities appear to have gained greater traction, leaving certain aspects HRH behind. Nevertheless, other aspects such as schemes of service and salary reviews have dominated conversation.

The issue of regulating the human resources for health assumes particular importance in an environment of ever-increasing diversity of origins of professionals working in the health sector. The new Medical Practitioners and Dentists Act and the new Nursing and Midwifery Act are long overdue and the Ministry is seeking international expertise expeditiously to modernize the legal framework for the practice of these key professions in Seychelles.

The issue of production of HRH clearly requires a new look at the School of Advanced Level Studies, the National Institute of Health and Social Studies, the University of Seychelles and the Agency for National Human Resource Development to interrogate deeply how they can together create the necessary synergies to contribute better to the Nation's production of HRH.

3. HEALTH STATUS



Health status can be defined as the description and/or measurement of the health of an individual or population at a particular point in time against identifiable standards, usually by reference to a set of health indicators.

3.1 VITAL STATISTICS

The mid-year population of Seychelles in 2018 stood at **96,762**; an increase of 919 (1%) over 2017. In terms of gender, **51%** of the population were men, while **49%** were women.⁷

3.1.1 LIVE BIRTHS

There were 1650 live births in (832 Males, 818 Females).⁸ The crude birth rate has decreased since 2016 from 17.37/1000 population to 17.05/1000 population in 2018 (Table 4).

TABLE 4. LIVE BIRTHS BY SEX, 2013- 2018

	2013	2014	2015	2016	2017	2018
Males	800	795	814	857	859	832
Females	766	762	778	788	792	818
Total (both sexes)	1566	1557	1592	1645	1651	1650
Crude birth rate per 1000 population	17.41	17.04	17.04	17.37	17.23	17.05

Source: NBS and Statistics Unit MOH

3.1.2 MORTALITY BY AGE AND SEX

In 2018, there were 818 (470 Males, 348 Females) recorded deaths.⁹ Crude death rate increased compared to previous five years to 8.45/1000 population (Table 5).

TABLE 5. ANNUAL DEATHS BY SEX, 2013- 2018

	2013	2014	2015	2016	2017	2018
Males	378	425	401	453	427	470
Females	333	300	302	293	321	348
Total (both sexes)	717	725	703	747	748	818
Crude death rate per 1000 population	7.97	7.94	7.53	7.89	7.80	8.45

Source: NBS and Statistics Unit MOH

⁷ National Bureau of Statistics. (2018). Statistical Bulletin: Population and Vital Statistics, Mid- Year Population Estimates. Catalogue Number: Population 2018/2. Seychelles. Retrieved from <https://www.nbs.gov.sc/downloads?task=document.viewdoc&id=449>

⁸ Department of Immigration and Civil Status, Seychelles

⁹ Department of Immigration and Civil Status, Seychelles.

3.1.3 MATERNAL AND INFANT DEATHS

There was an increase in the number of maternal and infant deaths in 2018 (Table 6). Two maternal deaths were reported, giving a maternal mortality ratio (MMR) of 121.2 per 100,000 live births; a relatively large number due to the relatively small number of births in Seychelles.

TABLE 6. MATERNAL AND INFANT DEATHS, 2017-2018

SDG	Indicator	2018 # [rates]	2017 # [rates]	NHSP Midterm target # [rates]
3.1.1	Maternal mortality ratio per 100,000 live births	2 [121.2]	1 [60.57]	<2 in 1600 births
3.2.2	Neonatal mortality rate per 1000 live births	24 [14.6]	16 [9.7]	< 6.25]
	Infant mortality rate per 1000 live births	31 [18.8]	18 [10.9]	< 10]
3.2.1	Under-five mortality rate per 1000 live births	[20.6]	[13.3]	< 14]
	Perinatal mortality rate per 1,000 total births	27 [16.2]	29 [17.4]	No target
	Stillbirth rate per 1000 total births	14 [8.4]	18 [10.8]	No target

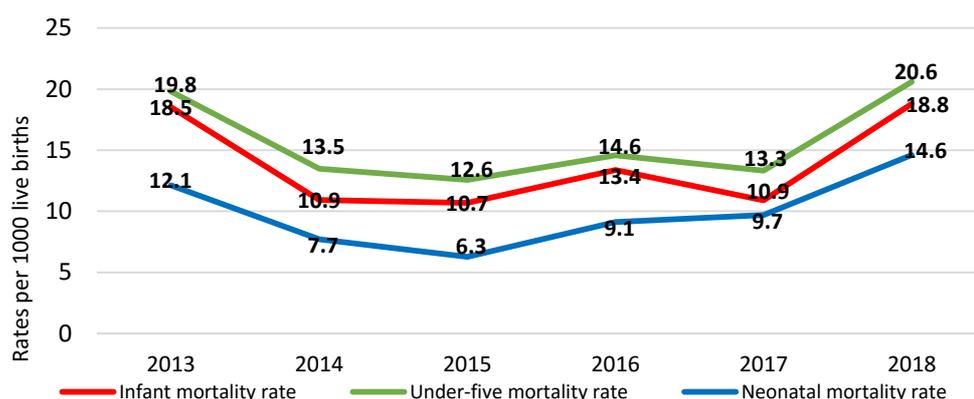
Source: Statistics Unit MOH. NHSP. WHO

Note: Total infant (<1year) deaths include deaths among neonates (<28 days).

There were increases in neonatal, infant and under-five mortality rates compared to 2017. The 2018 infant mortality rate (IMR) reflects a record high since 1982, exceeding a recent spike in infant deaths in 2013 (Fig. 2). Of the 31 infants who died, 10 had severe congenital malformations (see Annex 1 for a more in-depth analysis of 2018 infant mortality).

In 2018, the country failed to reach the NHSP midterm targets for neonatal, child and maternal mortality.

FIGURE 2. NEONATAL, INFANT AND UNDER-FIVE MORTALITY RATES, 2013-2018



Source: Statistics Unit MOH

3.1.4 LIFE EXPECTANCY

The life expectancy (LE) at birth for both sexes decreased from 74.3 years in 2017 to 72.7 years in 2018 - a decrease of more than one year (Table 7).

Excess mortality in 2018 was partly due to increases in infant deaths, 31 compared to 18 in 2017 (see section 3.13) and deaths in the age group 30-34 years that showed a 142% increase from 12 in 2017 to 29 in 2018. Heart disease, suicide, accidental deaths and cancer were the main causes of deaths where the increase was evident for this age group (see section 3.2).

TABLE 7. LIFE EXPECTANCY AT BIRTH (YRS.), 2013-2018

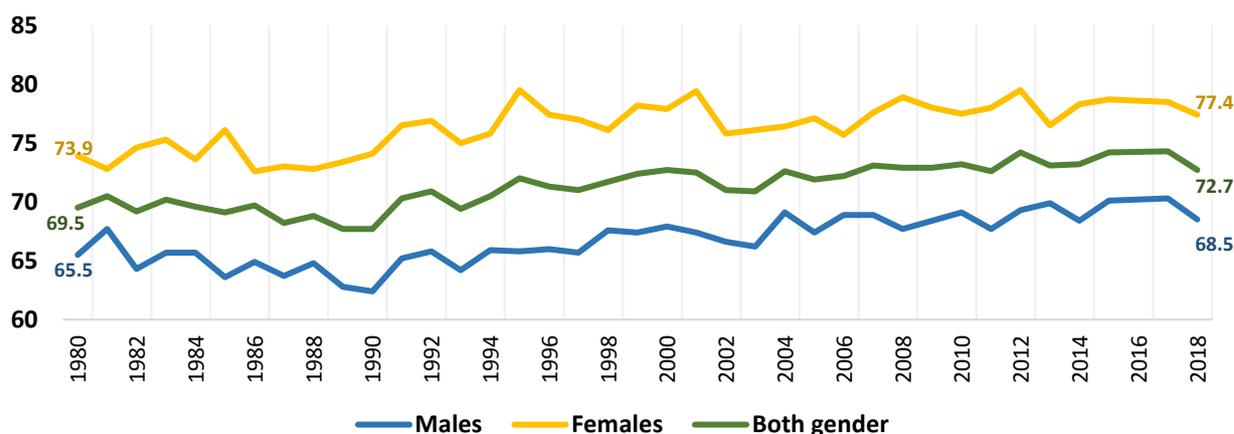
	2013	2014	2015	2016	2017	2018	NHSP Midterm Target
Male	69.9	68.4	70.00	69.5	70.3	68.5	73
Female	76.5	78.3	78.7	80.8	78.5	77.4	79
Both sexes	73.1	73.1	74.2	74.8	74.3	72.7	

Source: Statistics Unit MOH

LE for women decreased in 2017 from a high of 80.8 years in 2016 and again in 2018 to **77.4 years**. The gap in LE between men and women has remained between 8-11 years for the last 10 years and was 8.9 years in 2018. LE for both sexes are well below NHSP midterm¹⁰ targets. In the last 38 years, the country has gained only 3.2 years of LE for both sexes (Fig. 3).

¹⁰ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

FIGURE 3. LIFE EXPECTANCY AT BIRTH (YRS.), 1980-2018



Data source: NBS and Statistics Unit MOH

Note: For 2016, figure was revised by Statistics Unit

In 2016, according to WHO data,¹¹ Seychelles had lower LE compared to other high-income countries and some neighbouring small- island developing states, but higher than global and WHO African Region averages and (Table 8).

TABLE 8. COMPARISON OF LIFE EXPECTANCY FOR SELECTED COUNTRIES, 2016 WHO DATA

Country	LE at birth (years)
Maldives	78.4
Mauritius	74.8
Seychelles	73.3*
Madagascar	66.1
Comoros	63.9
Japan	84.2
Australia	82.9
United Kingdom	81.4
United States of America	78.5
WHO African Region (Average)	61.2
WHO Global (Average)	72.0

Note: *Statistics Unit revised value for Seychelles Life Expectancy in 2016 (74.8 years)

Health-adjusted life expectancy (HALE) or healthy life expectancy, is a measure of population health that takes into account mortality and morbidity. It adjusts overall life expectancy by the amount of time lived in 'less than perfect health'. HALE is a form of health expectancy that applies disability weights to health states to compute the equivalent number of years of

¹¹ World Health Organization. Retrieved from <http://www.who.int/healthinfo/statistics/indhale/en/>

good health that a new-born can expect.¹² HALE is a good measure of the health status of a population because by dividing LE into different states of health (years of life in good and poor health), HALE adds a ‘quality of life’ measure to LE.

Based on latest figures from WHO, HALE at birth for Seychelles was **65.7 years** in 2016; slightly above the global average of 63.3 years.¹³ This represents almost nine years of life with ‘poor health’ and has significant implications for health and social care.

3.2 MORTALITY BY CAUSE

The leading cause of death in the country remains diseases of the circulatory system which include cardiovascular diseases (CVD). In 2018, 32% of all deaths were due to diseases of the circulatory system, while 19% was due to neoplasms (Table 9).

TABLE 9. FIVE LEADING CAUSES OF DEATHS, 2010-2018

	2013	2014	2015	2016	2017	2018
Deaths of which (number)						
Total deaths	717	725	703	747	748	818
Diseases of the circulatory system	224	202	216	249	289	264
Neoplasms	119	125	151	135	130	152
Diseases of the respiratory system	123	104	88	91	98	139
External causes of morbidity and mortality	47	46	52	57	51	48
Infectious and parasitic diseases	58	82	47	54	47	48
Deaths of which (%)						
Diseases of the circulatory system	31	28	31	33	39	32
Neoplasms	17	17	21	18	17	19
Diseases of the respiratory system	17	14	13	12	13	17
External causes of morbidity and mortality	7	6	7	8	7	6
Infectious and parasitic diseases	8	11	7	7	6	6

Source: Statistics Unit MOH

¹² World Health Organization. Retrieved from <http://www.who.int/healthinfo/statistics/indhale/en/>

¹³ World Health Organization. Global Health Observatory (GHO) data. Retrieved from <http://apps.who.int/gho/data/view.main.HALEXv?lang=en>

3.2.1 NON-COMMUNICABLE (NCD) MORTALITY

NCDs (CVD, neoplasm, diabetes, chronic respiratory diseases) remain an important cause of both morbidity and mortality. The majority of deaths are caused by CVD and neoplasms. The number of deaths due to chronic respiratory diseases recorded in 2018 was much lower than figures for the past few years because previously, pneumonias were erroneously included in this group of diseases.

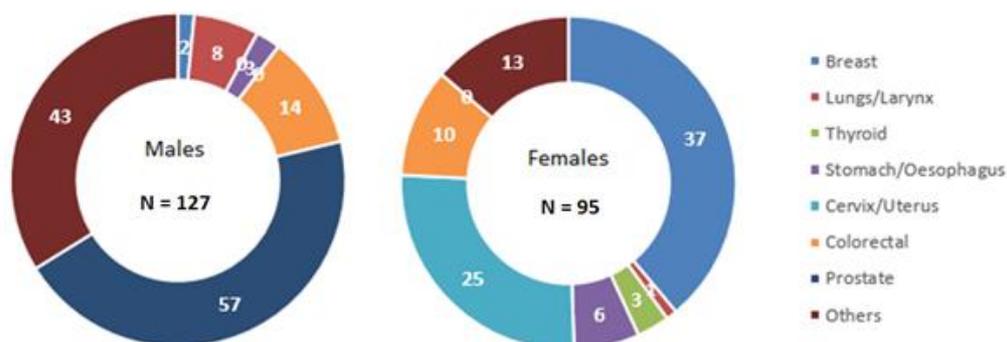
CVD

The Statistics Unit reported 123 new cases (74 Males, 49 Females) of cerebrovascular accidents and 33 new cases (21 Males, 12 Females) of myocardial infarction admitted to Seychelles Hospital. Among CVD deaths, 46 (32 Males, 14 Females) were due to ischemic heart disease, while 32 (19 Males, 13 Females) were due to cerebrovascular accidents.

Neoplasms (Cancers)

A total of 222 (127 Males, 95 Females) new cases of cancer were reported in 2018. This represents a slight increase from the 216 cases reported in 2017. For men, prostate cancer was the most commonly diagnosed (57/127 cases),¹⁴ - incidence of 116.8/100,000 men. Breast cancer (37/95) was the most common cancer diagnosed in women - incidence of 78.64/100,000 women (Fig. 4). Among breast cancers, 65% were diagnosed at stages 1 and 2, whereas, 45% were diagnosed at stages 3 and 4.

FIGURE 4. CANCER INCIDENCE MEN AND WOMEN, (ALL AGE GROUPS), 2018

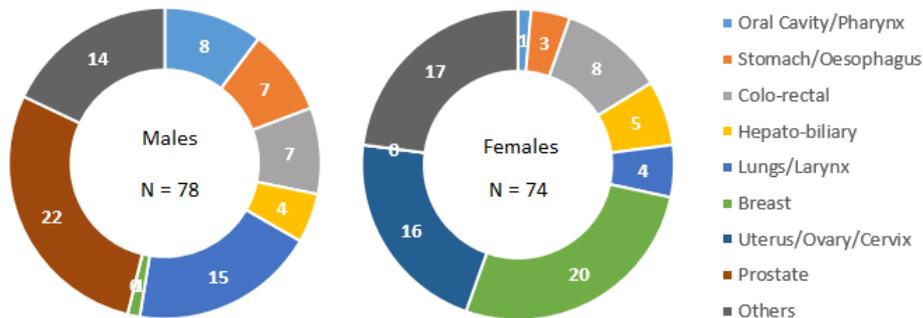


Source: Cancer Registry

¹⁴ Seychelles Cancer Registry

Cancer was the second highest cause of mortality in 2018 with a total of 152 (78 Males, 74 Females) deaths, an increase from the 130 deaths recorded in 2017. Among cancer deaths in women, 27% (20/74) were due to breast cancer, while in men, 28% (22/78) were due to prostate cancer. Fig 5 shows distribution of common cancer types among all cancer deaths.

FIGURE 5. DISTRIBUTION OF COMMON CANCER TYPES AMONG ALL CANCER DEATHS, 2018

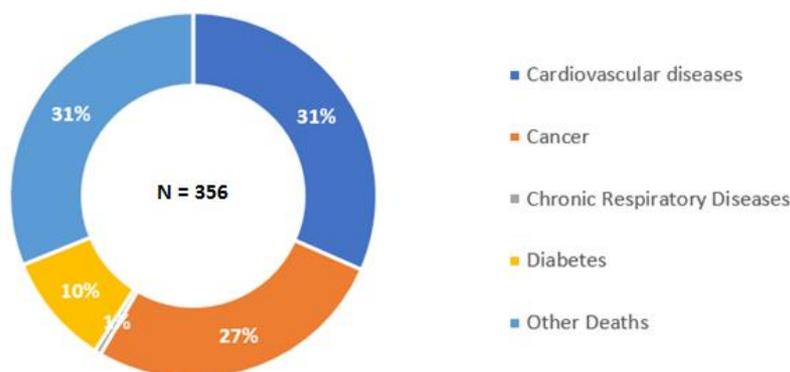


Source: Cancer Registry

Premature (age 30-70 years) NCD deaths

Among all deaths in the age group 30-70 years (N=356), 69% were due to NCDs: 31% from CVD, 27% from cancer, 10% from diabetes-related complications, and 1% from chronic respiratory diseases (Fig 6).

FIGURE 6. PROPORTION OF NCD DEATHS AMONG ALL DEATHS IN THE AGE-GROUP 30-70 YEARS, 2018



Source: Statistics Unit MOH

Among NCD deaths in the age group 30-70 years, 112 persons died from CVD (75% men), two deaths (0.6%) were due to chronic respiratory diseases and 35 (10%) deaths were related to diabetes and its complications. It is believed that there is underreporting of diabetes as a contributing cause of death.

The midterm NHSP target for premature deaths from NCDs is < 50% of total deaths in the age group 30-70 years.¹⁵ While the target in the *Seychelles Strategy for the Prevention and Control of NCDs*¹⁶ is a 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes and chronic respiratory diseases by 2025. The SDG 3.4 target is, one third reduction in NCD deaths in this age group by 2030.

The proportion of deaths due to NCDs in the age group 30-70 years in 2018 was 68%, 20% lower than figures reported in 2017.¹⁷ The higher NCD deaths in this age group reported in 2017 was due to pneumonia deaths being erroneously counted among chronic respiratory infections.

3.2.2 OTHER CAUSES OF DEATH

Leptospirosis

Leptospirosis is an infectious disease spread by urine of infected mammals, rodents and dogs or cats in particular. Seychelles has traditionally had a high incidence of, and mortality from, leptospirosis.¹⁸

Over 2,000 suspected cases of leptospirosis were reported from across the health system to the DSRU in 2018 and 28 patients admitted to Seychelles Hospital in 2018 had leptospirosis as their discharge diagnosis. Six deaths associated with leptospirosis were reported, compared to three in 2017 – all were men.

The NHSP midterm target for leptospirosis mortality is a case fatality rate of <15%; this was not calculated in 2018 as accurate data for the total number of cases of leptospirosis diagnosed were not available.

¹⁵ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

¹⁶ Ministry of Health. Seychelles Strategy for the Prevention and Control of non-communicable diseases 2016-2025.

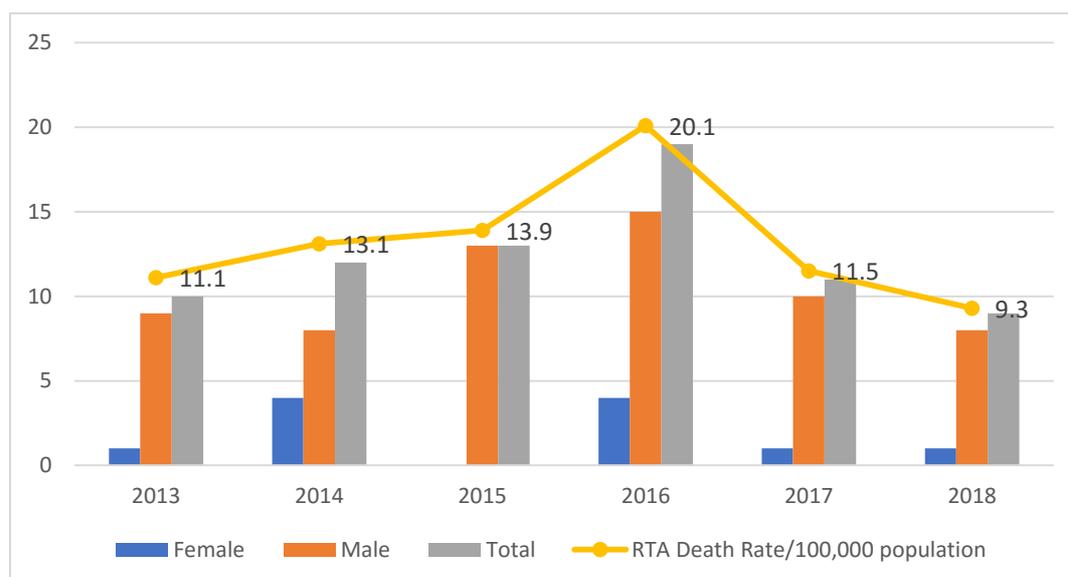
¹⁷ Ministry of Health. Annual Health Sector Performance Report, 2017

¹⁸ Pappas, G., Papadimitriou, P., Siozopoulou, V., Christou, L., & Akritidis, N. (2008). The globalization of leptospirosis: worldwide incidence trends. *International journal of infectious diseases*, 12(4), 351-357.

Road Traffic Accidents (RTA)

From 2013 to 2018, 74 people died from RTA; the majority (85%) were men. There was a decrease in the number of deaths due to RTA from 19 and 11 deaths in 2016 and 2017 respectively, to nine deaths in 2018. The death rate per 100,000 population due to RTA [SDG 3.6.1] in 2018 is 9.3 (Fig. 7). RTA was responsible for about 1% of all deaths in 2018; this is also the NHSP midterm target.

FIGURE 7. DEATHS DUE TO ROAD TRAFFIC ACCIDENTS, 2013-2018



Source: Statistics Unit MOH

Drowning

Deaths due to drowning or accidental submersion are significant in Seychelles. In 2018, there were 16 such deaths (15 Males, 1Female). Among deaths due to drowning, a large proportion occurs in foreigners (Table 10).

TABLE 10. DEATHS DUE TO DROWNING, 2017 AND 2018

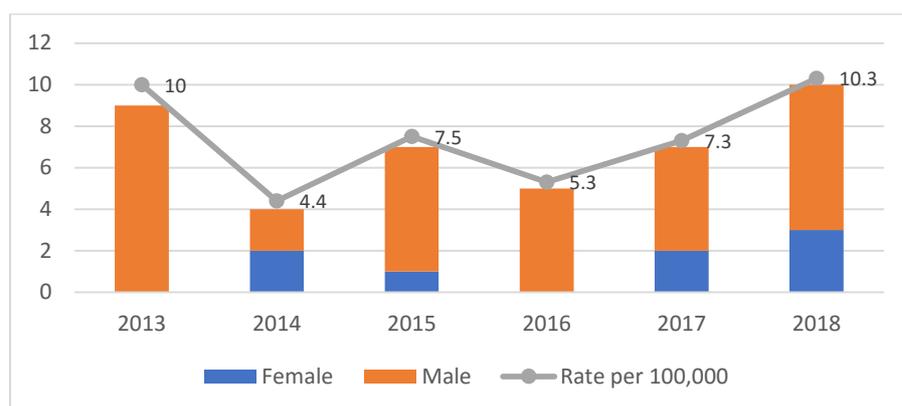
	2017	2018
Foreigner	11	6
Seychellois	5	10
Total	16	16

Source: Statistics Unit MOH

Deaths due to Intentional Self-Harm (Suicide)

There were 78 (44 Males, 34 Females) reports of intentional self-harm in 2018: two cases were reported in girls in the age group 10-14 years; 27 in persons aged 15-24 years; 17 cases in those aged 25- 34 years. A total of 10 suicide deaths (7 Males , 3 Females) were reported in 2018, giving a suicide rate per 100,000 population [SDG 3.4.2] of 10.3, an increase from 7.3 in 2017 (Fig. 8).

FIGURE 8. SUICIDE RATE PER 100,000 POPULATION, 2013-2018



Data Source: Statistics Unit MOH

Unintentional (accidental) Poisoning

There were 24 (15 Males, 9 Females) reported cases of unintentional poisoning in 2018, the majority of cases occurred in children. Only one death due to accidental poisoning was reported in 2018 - a 33-year-old male. Mortality attributed to unintentional poisoning per 100,000 population [SDG 3.9.3] for Seychelles in 2018 is 1.0.

Homicide [SDG 16.1.1]

There was only one homicide death (37-year-old male) reported in 2018 giving a mortality rate due to homicide per 100,000 population of 1.0.

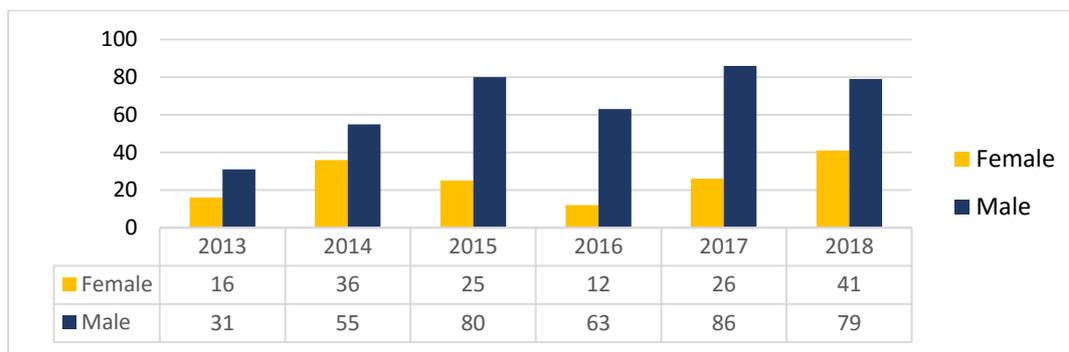
3.3 MORBIDITY

Among communicable diseases, HIV/AIDS, tuberculosis (TB), sexually transmitted infections (STIs), viral hepatitis C (HCV), dengue, and leptospirosis are some of the infectious diseases of importance in Seychelles.

3.3.1 HIV/AIDS

The NHSP midterm target for annual new HIV infections is <80 cases. There were 120 (79 Males, 41 Females) newly diagnosed cases of HIV in 2018; an increase from the 112 and 75 cases diagnosed in 2017 and 2016 respectively. This represents a big increase from the 47 cases diagnosed five years ago (Fig. 9).

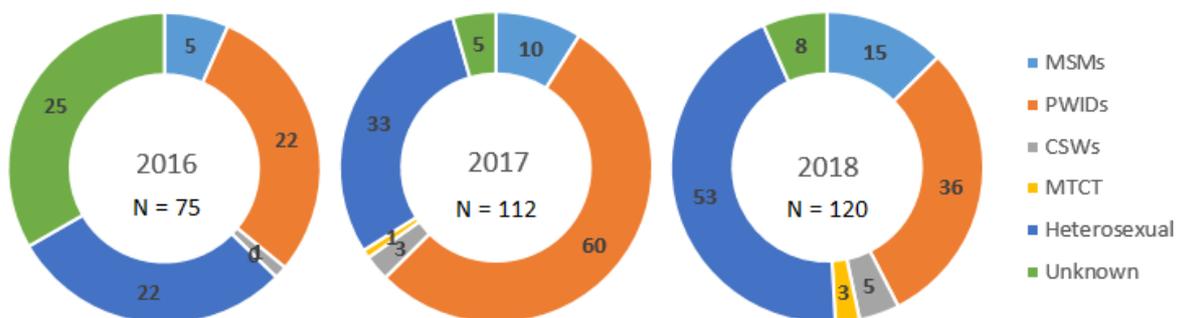
FIGURE 9. NEWLY DETECTED CASES OF HIV, 2013-2018



Source: CDCU

The HIV epidemic is concentrated among key populations, namely: people who inject drugs (PWID); men who have sex with men (MSM); and female sex workers (FSW). However, among the 120 new cases diagnosed in 2018, 44% were in heterosexuals and 30% in PWIDs. Mode of transmission of HIV in 2018 is different compared to 2016 and 2017 (Fig 10).

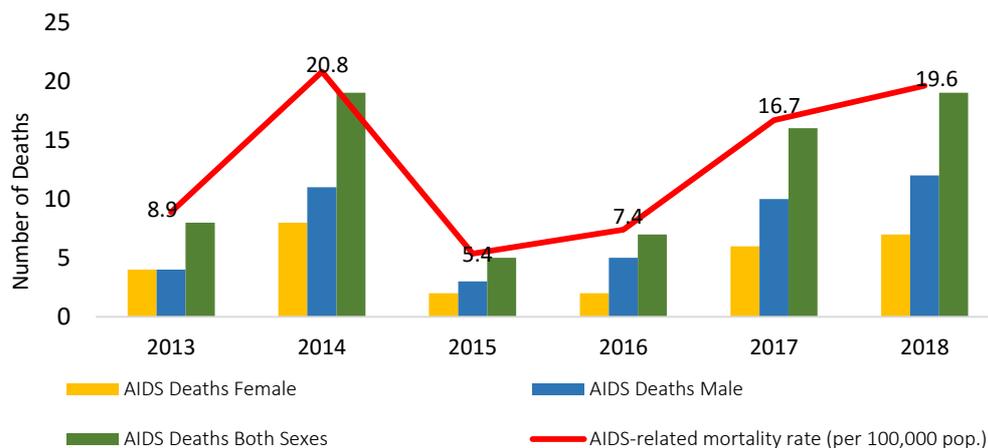
FIGURE 10. MODE OF TRANSMISSION AMONG NEWLY DETECTED CASES OF HIV, 2016-2018



Source: CDCU

The Communicable Diseases Control Unit (CDCU) reported 23 (17 Males, 6 Females); AIDS cases in 2018, representing an increase from the 18 and 9 cases reported in 2017 and 2016 respectively. A total of 19 persons (12 Males, 7 Females) died from AIDS in 2018 which represents 2% of total deaths which is higher than the NHSP midterm target of 0.5%. The AIDS mortality rate (per 100,000 population) has been increasing since 2017 (Fig 11).

FIGURE 11. AIDS- RELATED MORTALITY, 2013-2018

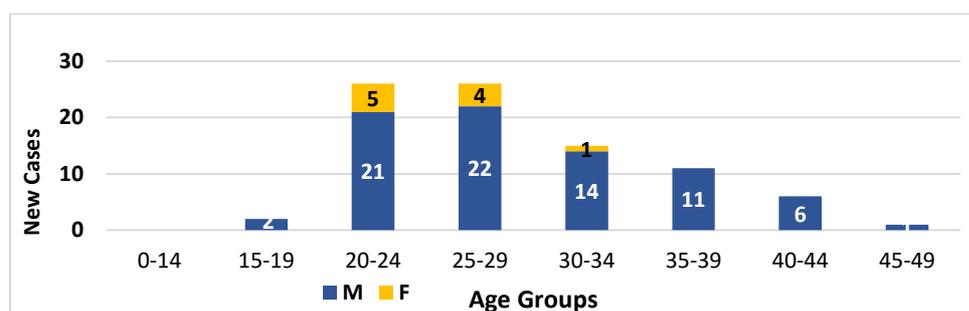


Source: CDCU/ Statistics Unit MOH

3.3.2 VIRAL HEPATITIS

The number of new cases of viral hepatitis C (HCV) decreased in 2018, 87 new cases (77 Males, 10 Females) were diagnosed - a significant reduction from the 186 new cases detected in 2017, and lower than the NHSP midterm target of 130. The majority of cases of HCV were detected at CDCU, Prison and facilities providing services for drug users (Wellness Centre & Dove Centre). The majority of people diagnosed with HCV are in the age group 20-29 years (Fig. 12), and 32 (37%) of the patients diagnosed with HCV were co-infected with HIV.

FIGURE 12. NEW CASES OF VIRAL HEPATITIS C BY AGE GROUP, 2018



Source: CDCU

In 2018, 23 (19 Males, 4 Females) new cases of viral hepatitis B (HBV) were detected – four cases were among prison inmates.

3.3.3 SEXUALLY TRANSMITTED INFECTIONS (STI)

The majority of STI are reported by the CDCU. It is believed that some people with STI are also managed in community and private health facilities, but currently these are not captured by the Statistics Unit.

The CDCU reported 806 (409 Males, 397 Females) new cases of STIs in 2018, giving an STI incidence rate of 833 per 100,000 population. This represents an increase in the number of cases compared to 2017 (653) and is much higher than the NHSP midterm target of 350 cases. Half of all the STIs reported by CDCU in 2018 were due to chlamydia and gonorrhoea (Table 11).

TABLE 11. STI BY GENDER AND TYPE, 2018

STI	Male	Female	Total	%
Bacterial vaginosis	-	90	90	11%
Chlamydia	170	49	219	27%
Genital Herpes	35	31	66	8%
Genital warts	21	44	65	8%
Gonorrhoea	158	28	186	23%
Latent syphilis	2	2	4	1%
Non-Gonococcal cervix	-	112	112	14%
Non-Gonococcal urethritis	23	-	23	3%
Pelvic Inflammatory Disease	-	6	6	1%
Trichomonas vaginalis	0	10	10	1%
Others	0	25	25	3%
Total	409	397	806	100%

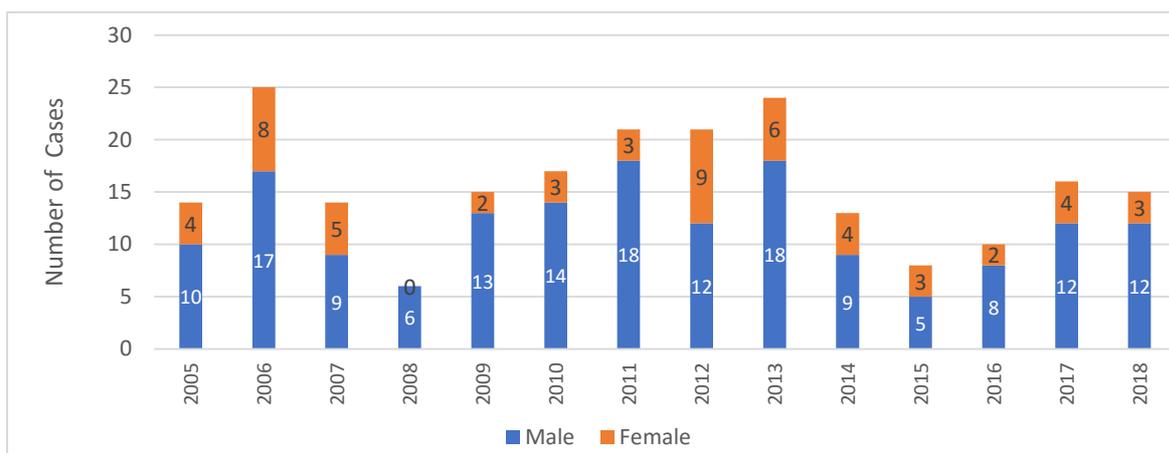
Source: CDCU

The number of gonorrhoea cases diagnosed in 2018 (186) is higher than in 2017 (117). **Resistance to antibiotics** is alarming for gonorrhoea: 51% of tested cases are resistant to Ciprofloxacin; 28% resistant to Ceftriaxone; 21% resistant to Cefixime; and 7% resistant to all three antibiotics.

3.3.4 TUBERCULOSIS

Since 2005, the highest annual number of new tuberculosis (TB) cases reported was 25 in 2016. The annual number of new TB reported has traditionally shown high variability as shown in (Fig. 13). In 2018, there were 15 (12 Males, 3 Females) new cases of pulmonary TB giving an incidence of 0.15/1000 population. One TB patient was co-infected with HIV and three TB cases were diagnosed in expatriates. There was no reported death due to TB.

FIGURE 13. NUMBER OF NEW TB CASES, 2005-2018

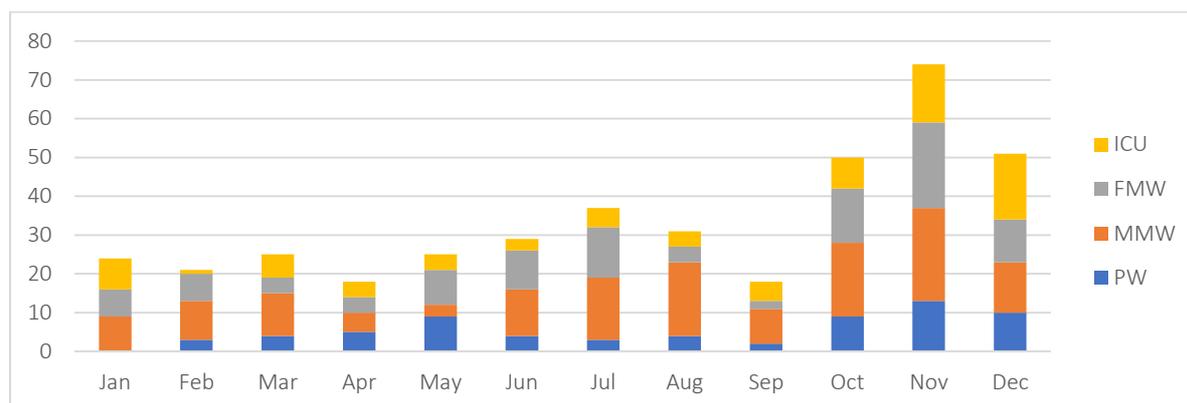


Source: CDCU

3.3.5 PNEUMONIA

A high number of deaths from respiratory diseases was reported in 2018. Pneumonia was the primary or contributing cause of death in 20.8% of all registered deaths compared to 16% in 2017. Seychelles Hospital reported a total of 323 admissions with pneumonia with an important increase during the last quarter of 2018 (Fig. 14). Similarly, deaths due to pneumonia peaked in October to December 2018.

FIGURE 14. ADMISSIONS ASSOCIATED WITH PNEUMONIA BY WARD AND BY MONTHS, 2018

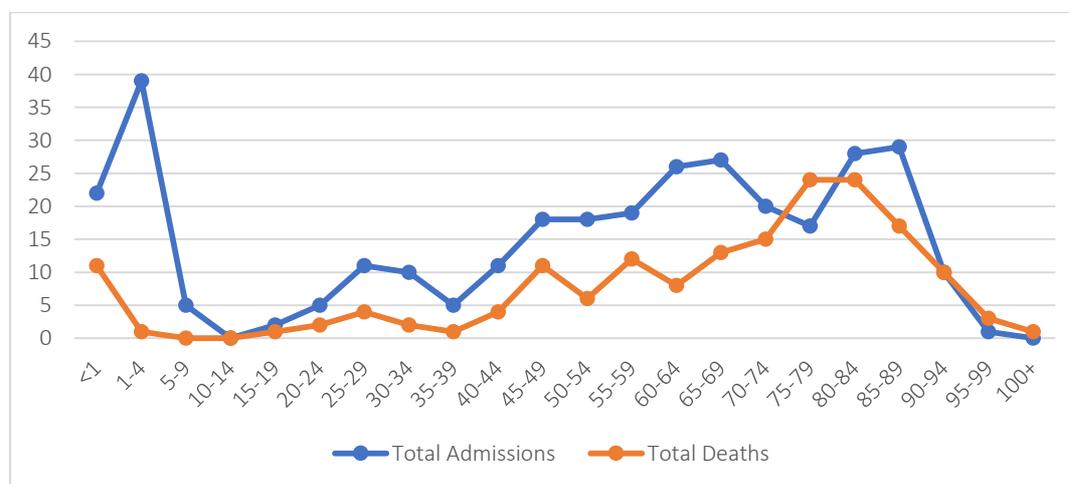


Source: Statistics Unit MOH

Notes: PW - Paediatric Ward; MMW - Male Medical Ward; FMW - Female Medical Ward; ICU - Intensive Care Unit.

Analysis of admissions and deaths due to pneumonia in 2018 by five-year age groups (Fig. 15), shows a bimodal distribution of admissions; the first peak in admissions is in the under-five age-group, without an associated high mortality (i.e. almost all recover); the second peak in admissions start from about age 50 years onwards, with an associated gradual increase in mortality with increasing age.

FIGURE 15. ADMISSIONS AND DEATHS ASSOCIATED WITH PNEUMONIA BY AGE GROUPS, 2018



Source: Statistics Unit MOH

A disaggregated analysis by gender (not shown here) showed men were admitted with pneumonia at younger age-groups (peak range 50 to 90 years) compared to women (peak range 80 to 95 years). However, deaths from pneumonia in both sexes were highest in the same age range 75 to 85 years.

Seychelles introduced Prevenar® (13-valent conjugated Pneumococcal vaccine) into the Extended Programme of Immunisation (EPI) in infants in mid-2018. This protects the vaccinated from the most common bacteria that causes pneumonia. Pneumococcal vaccination is currently not available for high-risk adults.

A notable limitation of this analysis is comparisons to previous years to describe temporal trends were not done, also data on type of pathogens cultured from sputum of pneumonia patients was not readily available from the Clinical Laboratory.

3.4 FERTILITY

For fertility, we look at the total fertility rate (TFR) and adolescent birth rate.

Total Fertility Rate

The TFR is expressed as the number of children per woman and is computed as the sum of age specific fertility rates divided by 1000. TFR was 2.41 in 2018.¹⁹ This is above average replacement fertility of 2.05 births per woman, which is the TFR at which a population replaces itself from generation to generation, assuming no migration.²⁰ The NHSP targets a TFR of three as midterm and end-term goals.²¹

Adolescent Birth Rate [SDG 3.7.2]

There were five live births delivered by girls aged 10-14 years and 212 live births delivered by those aged 15-19 years in 2018.

The adolescent birth rate (ABR) per 1000 adolescent girls aged 15 -19 years [SDG 3.7.2] for Seychelles has been above 60 since 2013 and was 94 in 2018 (Fig. 16). The local ABR is much higher than some regional countries and above the global average ABR average of 44.²²

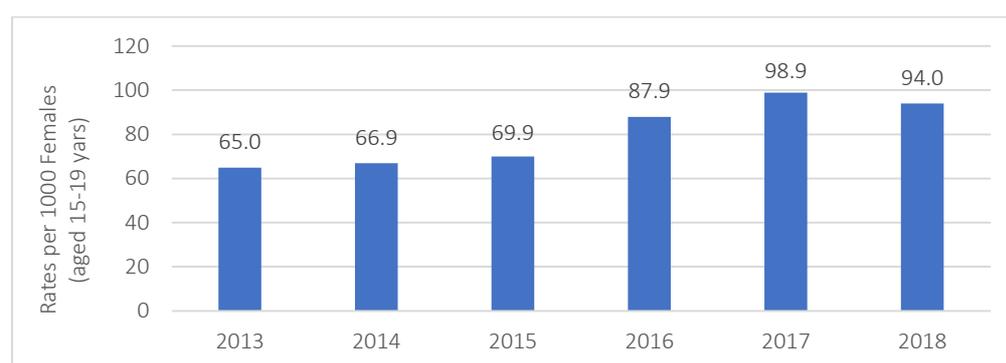
¹⁹ National Bureau of Statistics. Statistical Bulletin. Population and vital statistics, December, 2018

²⁰ Institute for Health Metrics and Evaluation (IHME). Findings from the Global Burden of Disease Study 2017. Seattle, WA: IHME, 2018.

²¹ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

²² World Health Organization. Global Health Observatory (GHO) data. <http://apps.who.int/gho/data/node.xgswcah.31>

FIGURE 16. ADOLESCENT BIRTH RATE (PER 1000 GIRLS AGED 15-19 YEARS), 2013-2018



Source: Statistics Unit MOH

The absolute number of live births among girls aged 15-19 years increased slightly in 2018, however, the number of girls in this age group increased to a greater extent, giving a small reduction in ABR (Table 12).

TABLE 12. LIVE BIRTHS AMONG ADOLESCENTS AND ADOLESCENT FERTILITY RATE, 2013-2018

	2013	2014	2015	2016	2017	2018
Female population aged 15-19 years	3187	2734	2674	2344	2032	2256
Live births in female population aged 15-19 years	207	183	187	206	201	212
Fertility rate in female population aged 15-19 (per 1000 female aged 15-19 years)	64.95	66.93	69.93	87.88	98.92	93.97

Source: Statistics Unit MOH, Population data from NBS

Note: After the development of this report, NBS published Population Bulletin 2018 where ABR was calculated excluding migration among population of girls aged 15-19 yrs.

The number of abortions in all age groups, including the number of termination of pregnancy (TOP) decreased in 2018 compared to 2017 (Table 13.)

TABLE 13. NUMBER OF ABORTIONS, 2017-2018

	2017	2018
Total abortions (<15yrs.)	10	4
Total abortions (15-19yrs)	83	74
Total Abortions (20 – 49 yrs.)	428	356
TOP (all ages)	80	68

Source: Annual Report of Family Health and Nutrition Programme, 2018

4. PUBLIC HEALTH



4.1 DISEASE SURVEILLANCE

The Disease Surveillance and Response Unit (DSRU) in the PHA conducts surveillance of over 50 priority diseases and conditions, and also responds to outbreaks and epidemics. Diseases under surveillance include dengue, leptospirosis, influenza, and pneumonias.

Events of importance in 2018

▪ Dengue

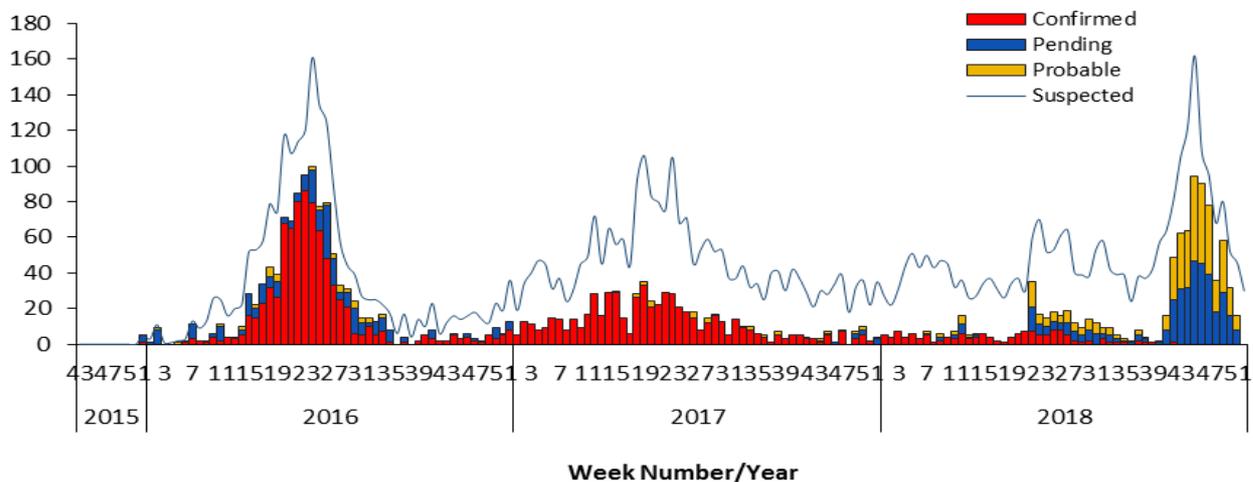
In December 2015, the MOH confirmed a dengue outbreak in Seychelles. Since then, up to week 52 of 2018, a total of 7047 suspected cases have been reported. The mean age of patients presenting with suspected dengue is 31 years (range 8 days to 101 years).

Among the suspected cases, blood samples were tested for 5752 with the following results:

- 1535 (27%) tested positive (a mean case detection rate of 27%); 972 (63%) males and 563 (37%) females;
- 300 (5%) were classified as probable cases; and
- 3917 (68%) tested negative.

From January to December 2018, a total of 2672 suspected cases were reported, an increase of 10% compared to the same period in 2017 (Fig. 17).

FIGURE 17. SUSPECTED DENGUE CASES BY WEEK, WEEK 52 OF 2015 - WEEK 52 OF 2018

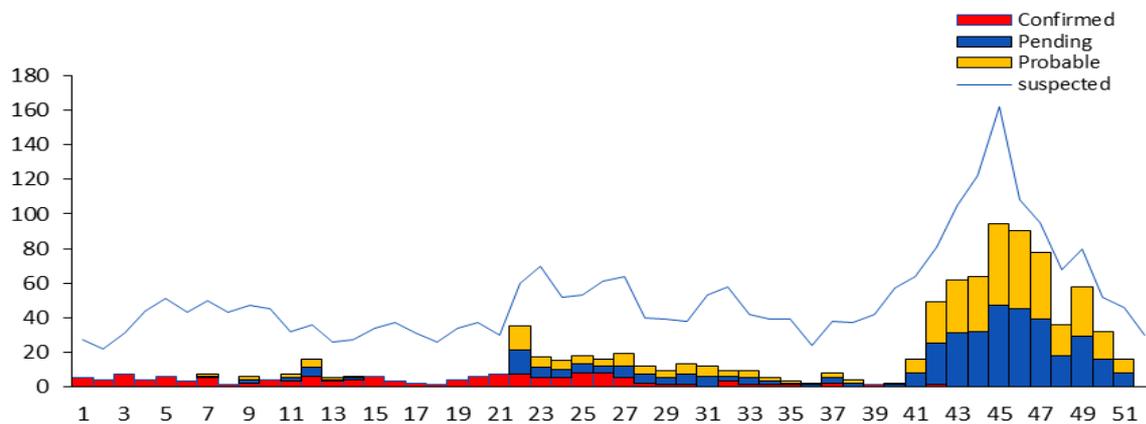


Source: DSRU

Despite the increase in the number of suspected cases, only 141 confirmed cases were reported compared to 602 cases in 2017. DSRU is unable to report the total number of confirmed cases of dengue in 2018 because laboratory testing was not done for all suspected cases due to lack of reagents.

Generally, for the year 2018, there was a constant number of suspected cases reported weekly but an increasing trend was observed as of week 39 with the maximum number of cases (162) reported since the beginning of the epidemic in 2015 at week 45, followed by a decline in the number of suspected cases reported from week 46 onwards (Fig. 18).

FIGURE 18. SUSPECTED DENGUE CASES BY WEEK, 2018 (N=2,672)



Source: DSRU

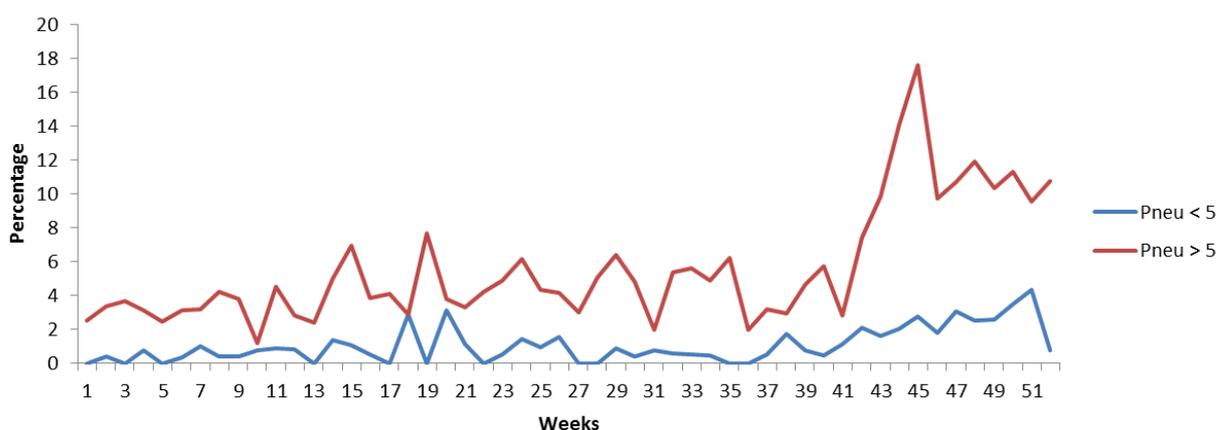
- **Influenza**

Reports of influenza- like illness were low throughout 2018 with no epidemic detected. There was a 14% reduction in the number of reported cases (48 cases) compared to 56 cases in 2017.

- **Pneumonias**

A total of 717 cases of pneumonia was reported - this was above what was expected and in the last quarter of 2018, and constituted an epidemic. Doctor consultation for pneumonia increased during the last quarter of 2018 (Fig. 19). Laboratory testing conducted on a sample (n=37) of patients admitted with Severe Acute Respiratory Illnesses revealed that 12 (32%) were positive for Influenza A H1N1 (pdm09), with superimposed bacterial infections.

FIGURE 19. PERCENTAGE OF DOCTOR CONSULTATIONS FOR PNEUMONIA IN 2018



Source: DSRU

Note: age <5yrs. blue line and >5 yrs. red line

▪ Leptospirosis

Leptospirosis remains a major public health concern despite efforts by MOH to reduce the disease burden. An average of 600 suspected cases are reported annually and a total of 1,546 probable or confirmed cases of leptospirosis were reported from 1988 to 2017. The number of reported suspected cases of leptospirosis increased from 1284 in 2017 to 2651 in 2018 (Table 14). Since 2005, there are 97 recorded leptospirosis-related deaths, the majority (92%) occur in young men.

TABLE 14. REPORTED CASES OF LEPTOSPIROSIS 2017 AND 2018

	2017	2018
Suspected cases	1284	2651
Probable cases		151
Confirmed cases		5
Probable or confirmed cases	87 (63M;24F)	
Registered Leptospirosis-related deaths*	3	6

Source. DSRU, * Statistics Unit

▪ Measles

On 13th of December 2018, the DSRU was notified of a suspected case of measles in an adult. Blood test by ELISA was positive for Measles IgM. The person had no prior history of travel outside of Seychelles in the preceding seven days suggestive of local transmission.

Investigation did not reveal the source of transmission and the case remains a probable case of Measles pending confirmation from a reference laboratory.

No active vaccination campaign was done for household or other contacts because of the high measles vaccination coverage (>95%) but active surveillance was maintained for possible new cases. This is the first probable case of measles reported in Seychelles after the last measles outbreak which was reported in 2006.

4.2 IHR MONITORING AND EVALUATION

In response to the increase in international disease threats and other health risks, 196 countries have agreed to implement the International Health Regulations (2005) (IHR), which came into force in 2007.²³ IHR aims to strengthen country capacities in preventing and controlling Public Health Emergencies of International Concern, whilst avoiding unnecessary disruption of travel and trade.

IHR monitoring and evaluation consist of one mandatory and 3 voluntary components:²⁴

1. Annual reporting to the World Health Assembly (mandatory)
2. Joint External Evaluation of IHR (voluntary)
3. After-action reviews (voluntary)
4. Simulation exercise (voluntary)

Seychelles conducted its first Joint External Evaluation (JEE) of IHR (2005) in March 2018.²⁵ A team of IHR experts joined with a multi-sectoral local team to evaluate the 19 core capacities.

Seychelles was commended on its ability to have a rapid response when a public health event occurs, under the umbrella of its Public Health Act.²⁶ However, weaknesses included lack of formalised documents, weak 'One Health Approach', and limited trained workforce in certain technical areas. The workshop made recommendations for each core capacity.²⁷ However, there were three over-arching recommendations as outlined below:

1. Strengthen the country's One Health Approach by conducting a review of the integration of the animal and environmental health sectors across all technical areas of IHR implementation. Implement formal joint mechanisms and processes to fill any gaps and institutionalize the One Health Approach
2. Establish a comprehensive, multi-sectoral training and simulation exercise programme to test, validate and enhance preparedness and response operations. Conduct after action reviews to audit the performance of the emergency preparedness and response plans

²³ World Health Organization. International Health Regulations (2005) - 3rd ed. Geneva: WHO; 2016

²⁴ World Health Organization. International Health Regulations (2005) IHR Monitoring and Evaluation Framework. Geneva: WHO; 2018.

²⁵ Joint External Evaluation of IHR Core Capacities of the Republic of Seychelles. Geneva: WHO; 2018.

²⁶ Government of Seychelles. Public Health Act, 2015, Act 13 of 2015 gazetted 19th October 2016.

²⁷ Joint External Evaluation of IHR Core Capacities of the Republic of Seychelles. Geneva: WHO; 2018.

3. Conduct a review of workforce needs and vulnerabilities across all IHR technical areas. Address gaps through recruitment and targeted training allowing existing and new staff to multitask and cover different health security roles. Complete the ongoing review of staff retention measures, and enact its recommendations

Following the JEE, the Seychelles team is developing a National Action Plan for Health Security for 2019-2023.

4.3 IDSR IMPLEMENTATION

In September 1998, the Regional Committee for the World Health Organization (WHO) African Region adopted resolution AFR/RC48/R2 calling on Member States to implement the Integrated Disease Surveillance and Response (IDSR) strategy to address major weaknesses in national public health surveillance and response systems in many African countries. Integrated Disease Surveillance and Response (IDSR) is a comprehensive, evidence-based strategy for strengthening national public health surveillance and response systems in African countries. The goal of IDSR is to integrate multiple 'categorical' surveillance and response systems and linking surveillance, laboratory and other data with public health action.

In November 2018, an assessment²⁸ of the implementation of IDSR in Seychelles was done by a consultant from the WHO. The overall finding was that IDSR coordination mechanism in Seychelles exists, but there is a need to develop and sign MOUs to enhance coordination, collaboration and information sharing within MOH and with other relevant sectors in the context of One Health Approach.

Recommendations following the IDSR assessment (Annex 2) will be used to guide the development of a roadmap for IDSR revitalisation and the adaptation of the 3rd edition IDSR Technical Guidelines.

4.4 HEALTH PROTECTION

The protection of health, which includes preventing the entry of diseases or vectors of diseases into Seychelles, food safety and environmental sanitation, is mainly the responsibility of the PHA.

There were no alerts in terms of risks of major outbreaks, although Ebola on the African continent and plaque and measles in Madagascar were noted and kept under review. With

²⁸ Ministry of Health. Situation Analysis Report on IDSR Implementation in Seychelles, 2018

the large and increasing number of food outlets, including mobile units, food safety has received a great deal of attention. While there were no reported outbreaks of food poisoning, inspections carried out on 2004 food establishments found 9% to be below standard. Of these, 20 were issued with closure notices. With regards to housing environmental issues, 2018 saw a decline in mosquito and rodent problems around houses. However, close to 9% of toilet facilities were found to be defective and the number of households without toilets or with pit latrines, although relatively small, remains a challenge. Several incidents of poor housing conditions for immigrant workers were recorded in 2018, and public health resources were directed, in partnership with other agencies, to address this pressing issue.

Health protection relies on collaboration with many partners and the active engagement of an informed and motivated public. Over the years, collaboration with partners in Tourism, Planning, Environment, Agriculture, biosecurity and others have been strengthened, but there remain gaps in coordination and information sharing. It is also true that greater efforts are needed to inform and educate the community. Moreover, maintaining professional standards and transparency in all operations are all the more important in the face of increasing demands and pressures from developers, food establishments and producers who sometimes perceive health regulations and standards are unnecessary hindrance.

5. RISK FACTORS



Several behavioural risk factors increase disease burden of both communicable and non-communicable diseases. WHO defines a risk factor as ‘...any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury’.²⁹

5.1 NON-COMMUNICABLE DISEASES (NCD) RISK FACTORS

Modifiable behavioural risk factors like smoking, insufficient physical activity, unhealthy diet and harmful use of alcohol all impact NCD diseases burden. So do the four related proximal modifiable risk factors: increased body mass index; high blood pressure; high blood cholesterol; and elevated blood glucose.

At the population level, assessment of risk factors for NCDs is often done through periodic surveys. The 2013 National Survey of NCDs in Seychelles among the adult population aged 25-64 years, noted a downward trend for smoking (due to the strict application of the Framework on Tobacco Control)³⁰, unchanged or slightly downward trends for high blood pressure and high blood cholesterol, but an upward trend for diabetes and obesity.³¹

The Seychelles NCD Strategy³² adopted several WHO targets including ‘0% increase in obesity and diabetes’. Data available from School Health Programme show that in 2017, those who participated (only 58% of eligible), the prevalence of overweight or obesity in children aged 9-16 years (P4, S1 and S4) more than doubled, between 1998 and 2017, from 9.3% to 26.4% in boys and from 12.9% to 28.5% in girls (Fig. 20).

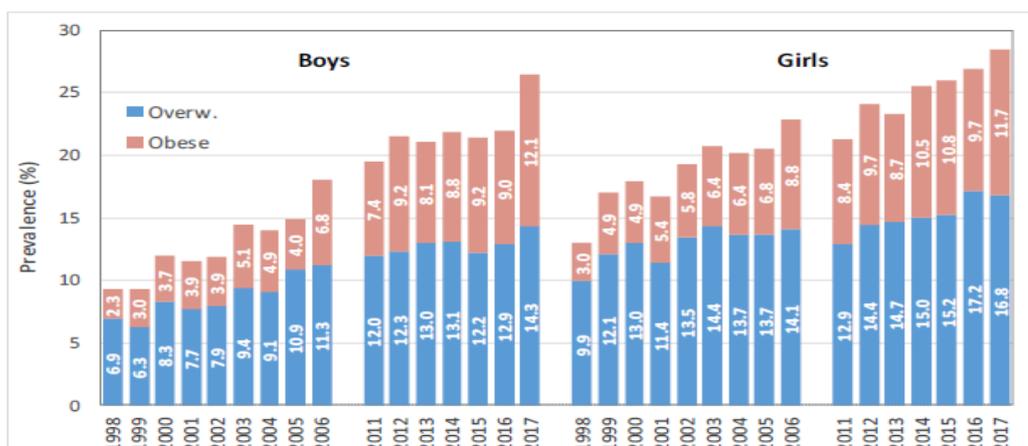
²⁹ Risk Factors. https://www.who.int/topics/risk_factors/en/

³⁰ World Health Organisation. Framework Convention on Tobacco Control. Geneva: WHO; 2005.

³¹ Ministry of Health. National Survey of Non-Communicable Diseases in Seychelles 2013-2014 (Seychelles Heart Study IV): methods and main findings. Seychelles: Ministry of Health; 2015 (http://www.who.int/chp/steps/Seychelles_2013_STEPS_Report.pdf).

³² MOH. *Seychelles Strategy for the Prevention and Control of non-communicable diseases 2016-2025*.

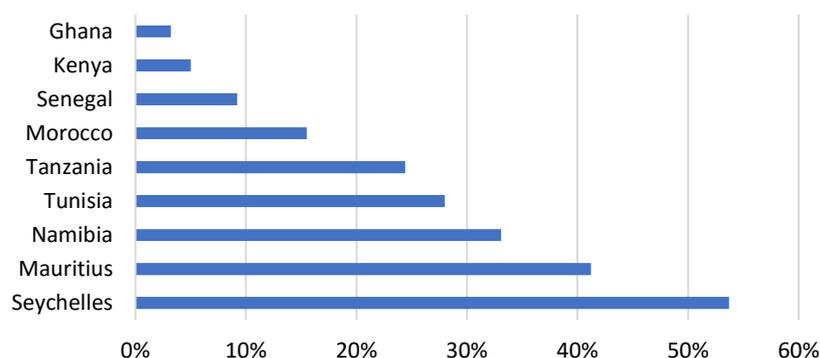
FIGURE 20. PREVALENCE OF OVERWEIGHT AND OBESITY IN BOYS AND GIRLS AT AGE 9-16 YEARS (P4, S1, S4), 1998 - 2017



Source: Mangroo G, Viswanathan B, Bovet P. School screening programme: update of the prevalence of overweight and obesity between 1996 and 2017. PHA, 2018.

Additionally, a study conducted by MOH in partnership with the International Atomic Energy agency (IAEA) to assess body composition using the criterion stable isotope technique and anthropometric measures in 8 to 10-year-old children, revealed that the prevalence of excess weight in children in Seychelles have increased by approximately 50% between 1998 and 2014.³³ This is higher than several African countries (Fig. 21) and also many high-income countries. The study also looked at types of food consumed by children and found that 60 % of children consume energy dense snacks at least once a day.

FIGURE 21. PREVALENCE OF OBESITY IN SCHOOL CHILDREN, SEYCHELLES AND SELECTED AFRICAN COUNTRIES



Source: Ministry of Health. Assessment of Body Composition in Children Using the Stable Isotope Deuterium Dilution Technique for Seychelles, 2018.

5.2 PREVENTION OF NCDS

³³ Ministry of Health. Assessment of Body Composition in Children Using the Stable Isotope Deuterium Dilution Technique for Seychelles, 2018

'Promoting and protecting health' is one of five strategic investment priorities identified in the NHSP.³⁴ Within the MOH, several units implement interventions to promote healthier lifestyles and prevent NCDs.

▪ **Unit for Prevention and Control of Cardiovascular Diseases (UPCCD)**

UCCPD is responsible for surveillance of CVD and also for policy formulation. In 2018 UCCPD implemented the following key interventions:

Tobacco Control

- Work was done to increase the excise tax on all tobacco products by 10%. This will come in to force in January 2019 as announced by the Ministry of Finance in the 2019 budget presentation, and will bring total tax to >70% of the retail price of cigarettes.
- As per section 27 (f) and (g) of the Tobacco Control Act, a regulation on Sale of Packages and Individual Cigarette was drafted by the Board and will be implemented in 2019.
- As part of the WHO FCTC³⁵, a protocol to eliminate illicit trade of tobacco products was adopted by parties to the Convention including Seychelles. Following the adoption, parties were requested to ratify the protocol. The protocol aims to eliminate all forms of illicit trade in tobacco products. It provides legal tools for preventing illicit trade by securing the supply chain of tobacco products, including the establishment of an international tracking and tracing system and enabling international cooperation. So far, 46 countries have ratified the protocol, including the European Union and 11 from the African Region.
- In Seychelles, a Cabinet memorandum was prepared by the Tobacco Control Board and approved by the Cabinet for the ratification of the above protocol. It is expected to be presented to the National Assembly in 2019 and ratified during 2019. A report on the implementation of FCTC was provided to the WHO.
https://untobaccocontrol.org/impldb/wpcontent/uploads/Seychelles_2018_report.pdf

³⁴ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

³⁵ World Health Organisation. *Framework Convention on Tobacco Control*. Geneva: WHO; 2005.

Sugar Tax

- In line with the NCD strategy 2016-2025, the High-level Multi-sectoral NCD Committee and UPCCD organized the technical consultation involving several WHO and local experts to review fiscal policies to promote healthy nutrition in the Seychelles in 2016. A proposal to introduce a 20% excise tax on sugar sweetened beverages was submitted to the MOH and Ministry of Finance.
- The High Level NDC Committee also proposed a text for the regulation on food content labelling that is needed for effective SSB implementation. This regulation of food content labelling was agreed by the Food Control Board and the regulation will be finalized in 2019.
- Several discussions and stakeholder consultations between the Ministry of Health and Finance took place in 2018 on the introduction of a 'sugar tax'. During the budget address at the National Assembly by the Minister of Finance in November 2018, it was announced that a sugar tax of four Seychelles rupees (SCR) per litre will apply to all sugar sweetened beverages with more than 5 grams of sugar per 100 ml. This is expected to come into force as from 1st April 2019.
- Several sensitization sessions to various stakeholders including; news item on National TV and Radio on SSB tax in October and continuous dissemination of posters to schools, workplaces and public places depicting the importance of water intake and the dangers of high sugar intake.

▪ **Nutrition Programme**

The Nutrition Programme promotes nutritional wellbeing across the life cycle. During 2018, the Programme led a research into childhood obesity in collaboration with the IAEA (see Section 5.1).

In consultation with key stakeholders, the 2009 *School Nutrition Policy* promoting healthy eating practices among school-aged children was revised. Implementation guidelines were discussed with representatives of the Ministry of Education (MOE) and implementation planned to start the second quarter 2019. The Nutrition Programme has also revised the 2006 *Seychelles Dietary Guidelines*. All approved policies and guidelines will be launched in 2019.

▪ **Cancer Programme**

The Cancer Programme is leading the drafting of a National Comprehensive Cancer Control Plan. The local Technical Working Group will conduct an internal assessment using a questionnaire from the WHO. Following this, there will be a combined technical mission from the WHO and IAEA, the Plan will be finalized in 2019.

- **Health Promotion Unit**

The Health Promotion Unit organized numerous media programmes and appearances in 2018 (Table 15). The programmes provided information and education on a variety of health issues.

TABLE 15. MEDIA PROGRAMMES PRODUCED IN 2018

Programme	Number of Programmes	Exposure Length (Minutes)	Total in Minutes
Bonzour Sesel (TV)	52	25	1300
Studio Clinic (SBC AM)	26	30	780
K-Radio (Sylvie)	42	30	1260
Allo Dokter (SBC TV) AM radio	13	25	325
Total			3,665

Source: Health Promotion Unit

The MOH Secretariat launched the *Health of our Nation (HOON) Campaign* in 2013 to promote healthier lifestyles. The National Health Theme for 2018, “My Health, My Responsibility: Keep Moving”, was launched on World Health Day to encourage physical activity amongst the population. During 2018, HOON Committee organized several events and also participated in national sports and cultural events. Additionally, IEC material promoting healthy life was produced and disseminated.

In line with the country’s vision of health, a programme to promote workplace wellbeing was launched in September 2018. The Workplace Wellbeing Programme (WWP) aims to create capacity at participating workplaces for employee-led, integrated health promotion interventions. The WWP gained widespread support when it was presented to Cabinet of Ministers on 26 September 2018.

Relevant experts from across the health sector and beyond have been recruited into a dynamic WWP training team: it includes representatives from Nutrition Programme, UPCCD, Mental Health Services, Health Promotion Unit, Occupational Health Unit, Department of Employment, the National Sports Council (NSC), Seychelles Workers Association for Sports and Health (SWASH) and the Private Sector.

The Seychelles Civil Aviation Authority (SCAA) and Air Seychelles, were chosen for the initial pilot for the programme. Three training workshops were held in 2018 and so far, despite positive feedback, only SCAA had implemented the programme by the end of 2018. The WWP remains fluid and plans to adapt to the needs of employees and workplaces in the coming years.

5.3 HIV AND HCV RISK FACTORS

Newly diagnosed cases of HIV increased in 2018. A series of integrated bio-behavioural surveys (IBBS) were conducted in the last 10 years to understand risk linked to HIV and HCV. The 2011 IBBS among PWIDS³⁶ revealed that the majority (80%) of PWIDs share needles, whereas an IBBS conducted in 2017 among heroin users revealed that 31% of those who inject drugs share injecting equipment.³⁷ Other surveys among MSMs³⁸ and FSWs³⁹, and also the KAPB⁴⁰ study revealed early sexual debut and low condom use during sex with casual and steady partners by both general and key populations.

Outside of population surveys, the increase in the annual number of STIs reported by MOH can serve as a proxy for unsafe sexual behaviour.

5.4 PREVENTION OF HIV AND HCV

The AIDS Prevention and Control Programme (APCP) is responsible for the health sector response to HIV and in 2018 promoted increased HIV testing in primary health centres and other prevention interventions through its Facebook page. Additionally, the APCP continued to advocate for zero discrimination for people living and affected by HIV/AIDS.

CDCU runs a Needle Syringe Exchange Programme and in 2018 a total of 1600 Sterikits (safe injection kits) were distributed. The number of new clients accessing this service decreased from 159 in 2017 to 83 (80M, 3F) in 2018. This could be linked to more PWIDs accessing the Methadone Maintenance Programme (MMP).

A WHO scoping mission was conducted to assess implementation of HIV and viral hepatitis services. The country has also started procedures to certify elimination of mother-to-child transmission of HIV.

The prevention of drug use and rehabilitation of drug users is under the purview of the Agency for the Prevention of Drug Abuse and Rehabilitation (APDAR) which was set up in 2017. Harm reduction services, and in particular MMP has seen rapid scale up recently, with a total of 1831 users at the end of 2018 compared to 170 only in 2017.

³⁶ Ministry of Health. Integrated biological and behavioural surveillance survey among people who inject drugs, 2011.

³⁷ APDAR. Seychelles biological and behavioural surveillance of heroin users, 2017.

³⁸ Ministry of Health. Integrated biological and behavioural surveillance survey among men who have sex with men, 2011.

³⁹ Ministry of Health. Integrated biological and behavioural surveillance survey among female sex workers, 2015.

⁴⁰ Ministry of Health. National HIV, AIDS and STIs Knowledge, Attitudes, Practice and Behaviour (KAPB) and Biological Surveillance Study, 2013.

6. ACHIEVING UNIVERSAL HEALTH COVERAGE



6.1 INTRODUCTION

The goal of universal health coverage (UHC) is to ensure that every individual and community, irrespective of their circumstances, receive the health services they need without risking financial hardship. UHC (SDG 3.8) underpins all other health-related SDGs.

UHC Dimensions

UHC includes the full spectrum of services needed throughout life—from health promotion to prevention, treatment, rehabilitation, and palliative care—and is based on a strong primary health care system”.⁴¹ There are three key dimensions to cover when aiming for UHC:

- **Population** - who is covered and who is left behind;
- **Services** - which services are covered and quality of services offered; and
- **Direct costs** - proportion of costs covered.

Population, Costs and Services Covered under UHC in Seychelles

The Constitution of the Republic of Seychelles⁴² guarantees free primary care in the public health sector. The Government provides free primary, secondary and tertiary care for all citizens of Seychelles. Health professionals and support staff in the 18 primary health care facilities and six in-patient facilities spread across the islands, provide a myriad of healthcare services to the population.

Although not guaranteed in the Constitution, highly specialised services such as haemodialysis and cancer care, are available to all in-need in public health facilities with no direct costs to the patients. When the medical needs arise, patients are sent overseas by the Government to access specialised medical treatment not available in Seychelles.

6.2 SERVICE COVERAGE

The WHO proposes the use of 16 essential health services in 4 categories⁴³ (outlined below) as indicators of the level of service coverage. Relevant available indicators, and where not available, proxy parameters, are reported in this section. A few additional key service areas are also described.

⁴¹ WHO: World Health Day 2019 (<https://www.who.int/westernpacific/news/events/world-health-day>)

⁴² Constitution of the Republic of Seychelles, 1994.

⁴³ World Health Organization. Monitoring universal health coverage. Geneva: WHO; 2017

6.2.1 REPRODUCTIVE, MATERNAL, NEW-BORN AND CHILD HEALTH (RMNCH)

Family Planning

Family planning (FP) services are offered free of charge in public primary health care facilities. The number of current users in 2018 was 7,564, however, this number is incomplete because data from one clinic is missing (Table 16).

TABLE 16. DEMAND FOR FAMILY PLANNING SATISFIED WITH MODERN METHODS

Tracer area	Tracer indicator	2017 data	2018 data	NHSP mid-term Target
Family planning	Number of women on modern contraceptives.	8495	7564(1)	60%.
	% of women of children bearing age on modern contraceptives.	39.7% (2)	38.1% (3)	

Source: Annual Performance Report, 2017; SRH Manager

Notes:

(1) No data from English River Health Centre

(2) + (3) All women in age group 15-49 was used as denominator.

Antenatal, Maternity and Post-natal Care

Antenatal (ANC) care and post-natal services are decentralized and offered in 10 primary health care facilities on Mahe, Praslin, and La Digue with centralized specialist care for high risk pregnancies. More than 99% of all deliveries are institutionalized and attended by trained midwives.

There were 19,467 antenatal visits in 2018, which involved 1,649 doctor consultations and 28,148 interactions with midwives. 1,547 post-natal visits (which involves examination of both the mother and the baby) were also conducted.⁴⁴ ANC coverage of more than four visits has consistently been over 95% for the last decade.

Childhood Immunizations

The country has a comprehensive childhood immunization schedule (Annex 3) and boasts very high immunisation coverage rates. Coverage rates in 2018 for all vaccines varied between 95.4% and 100%; coverage for DPT3 (included in Pentavalent 3) was 99%.

⁴⁴ Statistics Unit, MOH.

The Rotavirus Vaccine against diarrhoeal disease in infants and young children was introduced early in 2018, and reductions in admissions for diarrhoea can be expected in coming years.

The 13-valent conjugated pneumococcal vaccine (PCV13) which protects against pneumonia for infants was also introduced into the EPI schedule in 2018. This vaccine is also given routinely to haemodialysis patients.

The EPI is also in the process of switching from Oral Polio Vaccine (OPV) to Injectable Polio Vaccine (IPV), and has plans to move simultaneously from pentavalent to hexavalent vaccine with IPV integrated therein in the near future.

School Health

The School Health Programme covers school children in Crèche 1 and 2, Primary 4, Secondary 1, 4 and 5. In 2018, 88.4% (5,816 of 6,580) of eligible students were screened. The routine health screening of students in Secondary 5 was introduced in 2018 and 75.2% (976 of 1298) eligible students were screened.⁴⁵ There is a tendency towards reduced uptake of screening as children progress from primary to secondary schools.

6.2.2 INFECTIOUS DISEASES

Tuberculosis Treatment

WHO estimates the incidence of TB in Seychelles at 19 per 100,000 population in 2017.⁴⁶ CDCU reported 15 new cases (12 Males, 3 Females) of tuberculosis (TB) in 2018, all smear-positive pulmonary TB. All patients were started on treatment; three of whom were transferred out of Seychelles (expatriates) and two defaulted treatment in 2018 – providing a treatment coverage of 83%. All patients with TB are tested for HIV and one case only of TB-HIV co-infection was documented.

HIV Treatment

There is no official estimate of the total number of people living with HIV/AIDS (PLWHA) in Seychelles, but 768 persons have been diagnosed and were known to be living with HIV at end of 2018.

MOH offers a comprehensive package of services for HIV treatment and care. Anti-retroviral therapy (ART) is available in public facilities on Mahe and Praslin. The ART coverage was 72%

⁴⁵ Family Health and Nutrition Annual Report 2018.

⁴⁶ WHO TB Estimates <https://www.who.int/tb/country/data/download/en/>

at the end of 2018, with 91% of PLWHA on ART virally suppressed. The CDCU reports a 12-month retention rate on ART of 91.6%.⁴⁷

Prevention of mother-to-child transmission of HIV (PMTCT)

All women attending ANC in 2018 were tested for HIV at booking. Fifteen HIV-infected pregnant women received treatment for the prevention of MTCT giving a PMTCT coverage of 100%. Despite reports of full PMTCT coverage for the last two years, two infants tested positive for HIV and a third child (aged > one year) also tested HIV positive in 2018.

Treatment of Viral Hepatitis B and C

MOH offers treatment of HBV and HCV. To date, a total of 111 cases of HCV have been successfully treated with Directly Acting Antivirals (DAAs). HCV treatment coverage cannot be accurately calculated for 2018, as total number of HCV patients in need of treatment is unclear. CDCU also offers treatment of HBV.

6.2.3 NON-COMMUNICABLE DISEASES

Cardiovascular Diseases

Treatment of diabetes and high blood pressure is available in primary health care facilities and also through specialist consultations.

Data for treatment coverage and control of diabetes and hypertension are not readily available from routine reporting; this information is usually gathered through periodic population surveys. The last survey was done in 2013.⁴⁸

Data collected by DSRU show that in 2018, there were 273 new cases of diabetes and 971 cases of hypertension (Table 17).

TABLE 17. NEW CASES OF DIABETES AND HYPERTENSION REPORTED BY YEAR, 2015-2018

	2015	2016	2017	2018
Diabetes	227	281	310	273
Hypertension	952	782	983	971

Source: DSRU

⁴⁷ Data reported by NAC and CDCU to UNAIDS for year 2018, March 2019.

⁴⁸ Ministry of Health. National Survey of Non-Communicable Diseases in Seychelles 2013-2014 (Seychelles Heart Study IV): methods and main findings. Seychelles: PHA; 2015

Cancer Screening

Screening for cervical cancer by pap smears is done in primary health facilities, hospital and also by NGOs and private clinics. A total of 5,766 pap smears were done in 2018, unchanged in the last three years.⁴⁹ Among the pap smears done in 2018, 605 (10%) were done in an NGO clinic run by Alliance of Solidarity for Families (ASFF) (Table 18). The annual number of pap smears done is well below the NHSP mid-term target of 10,000.

TABLE 18. DISTRIBUTION OF PAP SMEARS DONE IN 2018

Facilities	# Pap smears 2018
Primary Health Clinics	3867
ASFF (NGO)	605
Other (Private, CDCU, SOPD)	1294
Total	5766

Source: Statistics Unit MOH

There are no formal screening programmes for breast and bowel cancers. Breast cancer screening (breast examination) is mainly done in Family Planning clinics for clients on contraceptives and for those undergoing pap smears, or occasionally, through adhoc screening campaigns.

Vaccines for cancer prevention, i.e. HBV and Human Papillomavirus Vaccines, are part of EPI schedule.

Mental Health Services

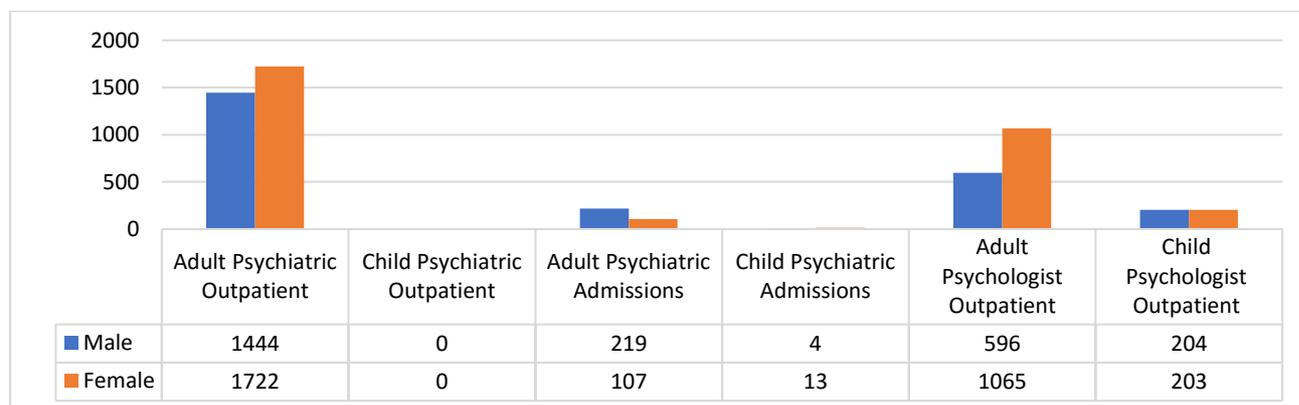
The unit for mental health services (MHS) provides treatment and rehabilitation services for individuals and families suffering from mental health. It is also responsible for prevention and promotion of mental health care for the general population. MHS package of care includes:

- Primary care mental health with specialist back-up
- Psychiatric Emergency and outpatient/ambulatory clinics
- Community mental health (CMH)
- Acute inpatient care
- Long-term residential care
- Occupational/day care

⁴⁹ Ministry of Health. Pathology Pap smear register log book, reported in Clinical Laboratory Annual Report 2018.

A total of 5,633 clients (3,505 for psychiatric and 2,068 for psychological services, including 407 children) accessed MHS in 2018 (Fig. 22). Slightly more women access the services amongst adults. A total of 326 admissions amongst adults and 17 amongst children were reported in 2018.⁵⁰

FIGURE 22. UTILISATION OF MHS SERVICES IN 2018



Source: MHS, HCA

6.3 CHALLENGES OF MEASURING UHC

Based on latest available data, the UHC Index (SDG 3.8.1) is >80 (Fig. 23). This places Seychelles on par with most other high-income countries.

Despite high coverage of most essential services, it is often difficult to fully measure UHC for some services for the following reasons:

- The absence of population surveys means the population in need is not known – this is a barrier to accurate measurement of coverage in areas such as family planning
- Services provided in private facilities are not routinely reported to MOH
- Despite free access to and high utilisation of services, the lack of granular data prevents the measurement of equity parameters to ascertain who is ‘left behind’
- Very few quality-of-care indicators are in routine use in Seychelles, preventing regular monitoring and reporting on quality of services provided.

⁵⁰ Mental Health Services, HCA

FIGURE 23. SERVICE COVERAGE INDEX, 2018

UHC Index Components	Year and Source	
RMNCH		72.04%
Family Planning coverage	2018, Sexual and Reproductive Health Programme Data; based on # reported, as percentage of total women aged 15-49 years.	38.1%
Antenatal Coverage (4+ Visits)	2018, Maternity Ward Data;	99.1%
Immunisation Coverage (DPT3)	2018, EPI Data;	99%
Care-Seeking for Pneumonia in children <5y	Not typically used in high-income countries with established health systems.	-
Infectious Diseases		82.22%
ART Coverage (of known PLWHA)	2018, CDCU Data;	72%
Tuberculosis Treatment (% of known cases)	2018, CDCU Data;	83%
WASH (Water Access, Sanitation and Hygiene)	2010, Population census, NBS; access to treated water 93% and improved sanitation 97%.	93%
Malaria Prevention	Not Applicable to Seychelles Context (no vector).	-
Non-Communicable Diseases		72.83%
Prevalence of normal Blood Pressure	2013, Seychelles Heart Study IV.	77%
Prevalence of normal Fasting Plasma Glucose	2013, Seychelles Heart Study IV.	63.5%
Prevalence Tobacco Non-Smoking	2013, Seychelles Heart Study IV.	79%
Service Capacity		95.83
Hospital Access	2018, MOH; compared to WHO recommendation of >18 beds/10,000 population.	100
Health Workers Density	2018, MOH; compared to WHO recommendations of >90 physicians, >14 surgeons and >1 psychiatrist per 100,000 population.	100
IHR Core Capacity Index	2017, Joint External Evaluation.	88%
Overall UHC Index	(72.04*82.22*72.83*95.83)^{1/4}	80

Note: Calculations done based on guidance from *Tracking universal health coverage: 2017 global monitoring report*. World Health Organization and International Bank for Reconstruction and Development / The World Bank; 2017. <https://apps.who.int/iris/bitstream/handle/10665/259817/9789241513555-eng.pdf;jsessionid=256B2FCDF746A6DC8E7CF2781CB81E6?sequence=1>

With the recent worsening performance in key health indicators such as maternal mortality, infant mortality and life expectancy, it is all the more important that all dimensions of UHC be measured and understood to enable targeted interventions.

7. HEALTH SYSTEM STRENGTHENING



The health system constitutes all the people, institutions, resources and activities whose primary purpose is to promote, restore and maintain health. A health system is strengthened through evidence-based approaches that improve access to health care, quality of service and health outcomes - this is achieved through strengthening of core building blocks of health systems.

7.1 HUMAN RESOURCES

Strengthening human resources for health is one of five strategic investment priorities identified in the NHSP.⁵¹ The aim of this investment priority is to ensure that MOH is adequately staffed with highly competent and motivated workers who are equitably distributed throughout the health system. This covers expectations relating to regulation, production, recruitment, deployment, remuneration, management and retention of the health workforce.

In 2018, there was an increase in the number of registered health professional of all cadres (chapter 2). Table 19 shows the number of health care providers within HCA.

TABLE 19. HCA STAFFING BY KEY HEALTH CADRES, 2018

	Nurses	Midwives *	Health Care Assistants	Doctors	Allied Health Professionals
Hospital Services	317	61	132	142	-
Primary Health care Services	193	56	130	46	-
Total	510	117	262	188	420

Source: Human Resources, HCA

*Midwives counted among Nurses

The Health Worker Density (SDG 3.c.1) in Seychelles exceeds the recommended WHO targets for Physicians (>90), Surgeons (>14) and Psychiatrists (>1) per 100,000 population (see Section 6.3 UHC Index).

There was a 6% increase in total staffing of Oral Health Services in 2018, giving a total of 15 dental officers, eight dental specialists, and 109 dental allied health professionals.

Expatriate doctors and nurses make up a large portion of the professional workforce in MOH and in private health facilities. For the last two years there has been an increased reliance on expatriate nurses – 83% of new nurses registered in 2018 were expatriates working in MOH.

Within MOH, there is continuous capacity building of health professionals that is done both locally and overseas. In 2018, the following main training were conducted:

- Training of health care workers in person-centred care at regional centres using a participative approach

⁵¹ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

- Training of oncology staff and hospital staff in cancer genetics and cancer genetic counselling
- Staff from relevant departments received training in stroke management
- A series of training workshops including: hearing tests assessments, Alzheimer, diabetes, stroke, HIV/AIDS, EPI, Family Planning, Domiciliary Care, Risk Indicators for Infants, and NCDs
- Continuous Medical Education sessions are organized by the HCA at regular intervals for all health professional cadres.

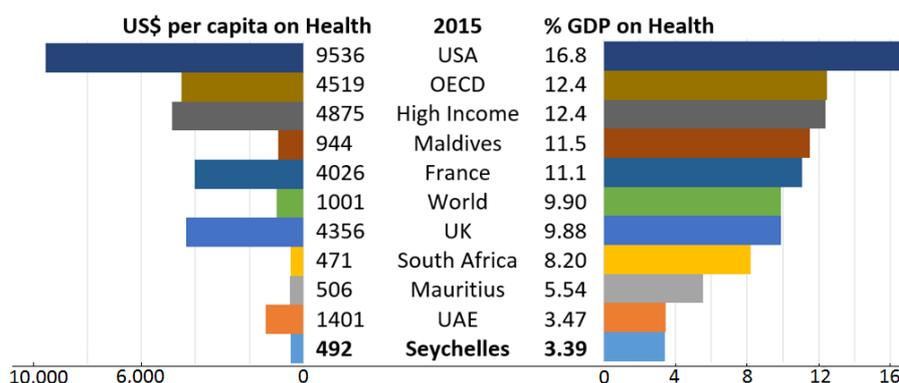
7.2 HEALTH FINANCING

Sustainable financing for health is a strategic investment priority of the NHSP.⁵² A good health financing system raises adequate sustainable funds for health in ways that ensures that people can use needed services and are protected from financial catastrophe associated with having to pay for them.

Even though there is a thriving private sector, at the moment, Government remains the main provider and financer of health care through general tax revenue. Services at public health facilities are provided free at the point of delivery.

Total current government health expenditure as a share of GDP remains low and between 2015 and 2017 rose from 3.4% to 4.4% only. In comparison, in 2015, two countries in the region as well as countries in the Organization for Economic Co-operation and Development (OECD) spent a higher share of their GDP on health (Fig. 24).

FIGURE 24. COMPARISONS OF SPENDING ON HEALTH, SELECTED COUNTRIES, 2015



Source: World Bank data, <https://data.worldbank.org/>

Locally, out-of-pocket spending on health appears to be increasing, many people use private health services locally and also pay for health services overseas. When assessing for **total**

⁵² Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

health expenditure as a percentage of GDP, there is an increase from 3.5% in 2015 to an estimated 7.9% in 2017. A major contributor to this increase is expenditure from households which is now around 25%.⁵³

The MOH received 11.7% of the total public sector spending for 2018 amounting to 912 million Seychelles Rupees (SCR), an increase of 1.9% from the previous budget year. The largest portion of the national health budget in 2018 was allocated to HCA (Table 20).

TABLE 20. MOH BUDGET ALLOCATION BY AGENCY, 2017 AND 2018

Entity	2017		2018	
	Amount	% Health Budget	Amount	% Health Budget
MOH Secretariat	49 012 050	5.50%	76 157 520	8.35%
HCA	800 934 410	89.40%	771 020 580	84.52%
PHA	42 071 000	4.70%	59 496 390	6.52%
NAC	3 562 840	0.40%	5 575 000	0.61%
Total	895 580300	100%	912 249590	100%

Source: International Corporation Unit MOH

Despite moving to full Programme Performance Based Budgeting (PPBB) in 2017, at the moment the MOH cannot track nor analyse expenditure by service or health programme. Additionally, there has been no exercise to understand cost efficiency of different services and programmes.

MOH received several donations in 2018; World Health Organization (WHO) is a valued partner in health and supported the MOH with several projects as outlined in Table 21.

TABLE 21. WHO/POA FOR THE YEAR 2017/2018

Programme	Amount Spent (USD)	% Expenditure
Polio Surveillance	8,609	1.9%
Policy and Systems	35,660	7.9%
Country Office	143,853	31.7%
Programme Support	265,578	58.5%
Total	453,700	

Source: WHO Office, Seychelles

MOH also received donations for a total value of SCR 521,825 and 3.9 Million USD from local and international donors respectively.

7.3 HEALTH INFORMATION

⁵³ Ministry of Health. Preliminary NHA report 2016/2017

Health information is an integral part of the health system. Sound and reliable information is the foundation of decision-making across all health system building blocks.⁵⁴ The health information system (HIS) provides the underpinnings for decision making and has four key functions: data generation, data management, communication and use. All primary health facilities, programmes, clinical, diagnostic and support services of MOH routinely collect and transmit data to leadership and data processing units. Currently, there are two data processing units: the Statistics Unit is based in the MOH Secretariat, and the DSRU in the PHA. Both data processing units produce regular bulletins and reports.

Performance monitoring and evaluation (PM&E)

In 2018, in line with the *National Performance Monitoring and Evaluation Policy*,⁵⁵ MOH set up a PM&E Steering Committee that is tasked to strengthen monitoring in the Sector. As part of the planning phase, a PM&E readiness assessment (RA) was conducted in Q2 of 2018 with the objective of determining whether the prerequisites are in place for building and/or strengthening a results-based PM&E system. The results of the RA were presented in a one-day consultative meeting and the next steps of PM&E strengthening discussed.

Electronic Health Information System (HIS)

To improve data collection and transmission, MOH is also planning the implementation of an electronic HIS. In 2018, final evaluation of all bidders was completed and submitted to the National Tender Board which approved one company - HCA is now awaiting the outcome of the Procurement Review Panel.

Research

Research contributes to strategic information and informs decision making. There is a dedicated Research Unit within the PHA. In 2018, key research projects included the following:

- Investigating population cancer genetics to identify population that are at high risk of developing cancer;
- Assessing the relationship between child neurodevelopment outcomes and exposure to methyl mercury from fish consumption, and nutritional, environmental and genetic factors that might influence that relationship.
- Understanding gut micro biota composition and its effect on diabetes;
- Assessing feasibility of diabetes passport in diabetes management
- Assessment of childhood obesity through measurement of body fat composition;
- Patients' perception of the quality of nursing care; and
- Data collection for National Health Accounts.

⁵⁴ Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva: World Health Organization; 2018

⁵⁵ Department of Public Administration Government of Seychelles. Seychelles Performance Monitoring and Evaluation Policy, 2018.

The Ministry of Health, in collaboration with the National Institute for Science, Technology and Innovation, the University of Seychelles and the Seychelles Fishing Authority, organised a multidisciplinary research conference in November 2018. The conference covered a broad range of research which included health and nutrition, agriculture, education, poverty and marine environment.

7.4 SERVICE DELIVERY

A good service delivery system provides, effective, safe, quality health interventions to those that need with minimum waste of resources. Health services in public facilities are offered free at the point of delivery through a network of hospital and community facilities.

7.4.1 ACCESS AND UTILIZATION

A SARA survey conducted in 2017 showed that number of health facilities, hospital beds and health care workers are all above WHO recommended standards.⁵⁶

Primary health care is provided through a network of 18 facilities, while secondary and tertiary care is centrally located at Seychelles Hospital. Patients who require specialized services not available locally are referred to overseas hospitals at Government cost. Palliative and rehabilitative care is provided through three facilities (Hospice, North East Point Hospital and Rehabilitation Centre) all located in close proximity to each other.

There were more than 450,000 doctor consultations in 2018, this is an increase of <1% compared to 2017 figures, however, for nurse consultation there was a decrease (Table 22). Doctor consultation in primary care facilities, after-hours appears to show the sharpest rise since 2013 (For detailed attendance data by region see Annex 4)

TABLE 22. OUT-PATIENT CONSULTATIONS, 2013-2018

Type	2013	2014	2015	2016	2017	2018
Doctor consultation						
Normal Hours	239,913	254,323	269,811	274,787	262,896	272,787
After Hours	61,451	65,801	78,507	86,496	87,432	84,678
Specialist Consultations						
Total Doctor Consultations	87,167	83,990	91,155	93,350	100,932	98,886
	388,531	404,114	439,473	454,633	451,260	456,351
Nurse Interventions	189,067	196,515	208,394	226,021	250,017	201,845
Dressings	86,637	93,546	91,825	87,887	84,766	83,061

Source: Statistics Unit MOH

⁵⁶ Ministry of Health. Annual Health Sector Performance Report 2017

Accident and emergency

The number of visits to the accident and emergency (A&E) unit in 2018 (50,822) was slightly higher than in 2017 (50,123). The Command Centre received 19,008 calls for ambulance of which 92% were dispatched. Of note in 2018, 12 new ambulances were added to the ambulance service. Less than 20% of people seen in A&E are considered 'true emergency'.⁵⁷

Admissions

There was a total of 12,428 admissions in Seychelles Hospital in 2018, giving a total of 63,907 occupied acute bed nights; Male Medical Ward had the highest average bed occupancy rate of 102%, whereas, the Neonatal Intensive Care Unit (NICU) had the lowest rate (33%).

Rehabilitative services

The MOH offers physiotherapy, occupational therapy and acupuncture in hospital and primary health facilities. A total of 6634 new patients were referred for physiotherapy and 60,541 physiotherapy sessions were done in 2018. The most common reasons for physiotherapy attendance were inflammatory joint pain (11,551) and back-ache (9,925).

Diagnostics

▫ Clinical laboratory

The Clinical Laboratory conducted 715,680 tests in 2018, a 7% increase compared to 2017. A laboratory at Anse Royal hospital was opened in October and it offers routine haematology, biochemistry and microbiology testing. The MOH also has Public Health and Drug Quality Control Laboratories.

▫ Radiological imaging

The radiological Diagnostics Centre at Seychelles Hospital offers a variety of services and in 2018, close to 54 thousand examinations were done (Table 23). Of note, about a quarter of these examinations are done after normal working hours.

TABLE 23. RADIOLOGICAL EXAMINATIONS, 2018

⁵⁷ Ministry of Health. Annual Report Accident and Emergency, 2018.

Types of Examination	During Normal Working Hours	After Normal Working Hours	Total
MRI	1321	438	1759
C.T. Scan	5153	1681	6834
X-Ray	24039	8516	32555
Ultrasound	10081	1934	12015
Special Screening	229	45	274
Mammogram	473	38	511
Total	41 296	12 652	53 948

Source: Statistics Unit MOH

Access to Medicines

The Pharmaceutical Services of the HCA ensure that the public has access to safe, effective and quality pharmaceutical products. Seychelles has an Essential Drug List comprising 431 items. All pharmaceutical products at public facilities were free of charge in 2018, however, a prescription fee of SCR25 will be introduced in 2019.

In 2018, there was an increase of 0.4% in the number of prescriptions filled in public facilities (Table 24). Although there was only a slight increase in number of prescriptions filled in 2018, expenditure on medicines increased by 19%; the biggest increase in drug expenditure were in: cardiovascular medicines (37%); anticoagulants (97%); cancer therapy (32%); antiretroviral drugs (32%); and medicines for renal anaemia (135%).

TABLE 24. NUMBER OF PRESCRIPTIONS FILLED AND EXPENDITURE ON MEDICINES, 2017-2018

Units	2017 Data	2018 Data
Primary Care Pharmacies prescriptions		
- Mahe	290 231	297 023
- Praslin and La Digue	59 782	52 907
Seychelles Hospital prescriptions	98 902	100 887
Total prescriptions	448 915	450 817
Medicine expenditure (SCR)	46 710 086	55 716 061

Source: Pharmaceutical Unit

Note: It would be incorrect to divide total expenditure by number of prescriptions to get a 'cost per prescription'.

Oral Health Services

Oral health services are available free of charge in the MOH. The Oral Health Services Division of the HCA is comprised of the following: Community Dental Services Section (Adult Dental Services and School Dental Service); Specialist Dental Services Section (Oral and maxillo-facial and orthodontic units); Dental Laboratory Unit; and the Dental Public Health Section, which also includes the Dental Hygienist Unit. Preventive, restorative and rehabilitative dental

services are provided in 11 community dental clinics, 12 school-based dental clinics and one centrally located dental clinic.

Despite a thriving private sector, the number of consultations for public oral health services is increasing. In 2018, more than 80,000 consultations were recorded compared to 74, 303 in 2017 (Table 25). It is important to note that almost 30% of all dental appointments are not kept.

TABLE 25. ATTENDANCE FOR DENTAL CARE, 2017-2018

Dental Units	Total Attendance	
	2017	2018
School Dental	28 425	24 249
Adult Dental	31 080	37 486
Dental Hygiene	5686	8661
Orthodontic	3481	7491
Maxillo-Facial	5631	6087
Total	74 303	83 974

Source: Annual Statistical Bulletin Oral Health Services, 2018

Quality of care

Quality of care is an important dimension of service delivery. Data are not available for the quality of care indicators set in the NHSP:⁵⁸

- average length of hospital stay;
- perioperative mortality rate;
- number of hospital acquired infections;
- proportion of preventable maternal deaths;
- proportion of preventable infant deaths; and
- proportion of inpatient deaths.

In 2018, a committee was set up by the HCA to implement findings from the 2017 Patient Safety Situational Analysis Survey.⁵⁹ Two key areas addressed were medication safety and infection prevention and control. Additionally, in 2018 a concept note was drafted for comprehensive facility assessment in collaboration with WHO. This survey will be conducted in 2019 and will include assessment of quality of care.

In the area of quality of nursing care, a patient satisfaction survey was conducted in 2018 to assess patients' perception of the quality of nursing care. Overall findings showed that the majority of patients (89%) positively rated their level of satisfaction with perceived quality of nursing care they received.

⁵⁸ Ministry of Health. Seychelles National Health Strategic Plan 2016-2020.

⁵⁹ Ministry of Health. Seychelles Efficiency and Value for Money in Health Spending, 2017

There is a need for systematic monitoring of quality of care in both hospital and primary health care facilities.

7.4.2 SPECIALIZED CARE

MOH offers a variety of specialized care through the HCA and PHA.

Overseas treatment

There was a 17% decrease in number of patients sent for overseas treatment in 2018, compared to 2017. The reduction was noted with regards to: ENT-related procedures (5.1% of total cases in 2017 to 1.4% in 2018), Urology (5.1% of total cases in 2017 to 2.8% in 2018), Gynaecology (1.6% of total cases in 2017 to 0.5% in 2018) and haematological conditions (2.8% of total cases in 2017 to 0.5% in 2018).

Despite the decrease in total number of patients accessing overseas treatment, the proportion of patients sent overseas for cancer treatment remained stable, 30 % in 2017 and 32% in 2018.

The total expenditure on overseas treatment in 2018 was 3 million SCR less than in 2017 (Table 26). Spending on oncology care accounted for 40% of the total overseas treatment expenditure. Of all oncology patients, 78% was referred for radiotherapy.

TABLE 26. COST OF OVERSEAS TREATMENT 2017-2018

	2017	2018
Number of Patients	255	211
Expenditure (in Million SCR)	43.9	40.9

Source. Overseas Treatment Unit

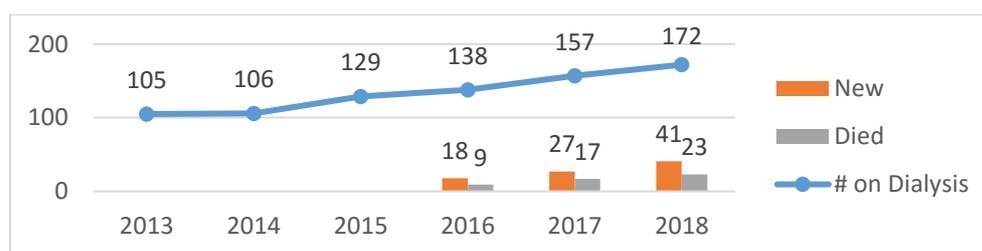
Haemodialysis

Haemodialysis services are offered free by the MOH on Mahe and Praslin. For the last four years this service has been out-sourced to a private company, AMSA Renal Care. An increasing number of new patients are enrolled into chronic haemodialysis care each year, an indicator of increasing numbers of people progressing into end-stage kidney disease in the country. Available data do not allow an analysis of the reasons for end-stage kidney disease.

On average, the number of patients on dialysis increased by 10.6% per year (range 1% to 21.7%) for the period 2013 to 2018. The number of new enrolments, and deaths among patients on chronic dialysis show an increasing trend for the last three years (Fig. 25).

Despite the increase in patients starting chronic dialysis, the number of dialysis sessions performed by AMSA in 2018 remained fairly similar to 2017. This is probably due to some patients attending a private clinic for a few months during 2018. Haemodialysis services consume approximately 10% of the HCA annual budget for <200 patients.

FIGURE 25. DATA FOR CHRONIC DIALYSIS, 2013-2018



Source: AMSA

With regards to self-assessed quality of service provision at AMSA Renal Care, patient satisfaction has been reported as good, with the chief complaint being long waiting times. Of note the average waiting time to start dialysis session is 60 minutes, and about half of patients start dialysis within 30 minutes of registration.

Oncology

HCA hosts a Tumour Board – a multidisciplinary team composed of specialists who guides and provides oversight for the management of patients with cancer. In 2018, 196 cases were presented to the Tumour Board (Table 27).

TABLE 27. CASES PRESENTED TO TUMOUR BOARD, 2018.

Cases	Number
New cases	162
Recurrent cases	15
Updates	18
Non-malignant cases	1
Total	196

Source: Tumour Board Annual Report, 2018

The Oncology Unit provides out-patient care for cancer patients at the Seychelles Hospital; in 2018 patients received a variety of services (Table 28).

TABLE 28. ONCOLOGY UNIT STATISTICS, 2018

Category	Number
Patients on chemotherapy	741
Patients who completed Chemotherapy	47
Patients who aborted chemotherapy	22
Patients on Filgrastim (Neupogen)	294
Bone marrow aspiration	4
Oncology out-patient consultations	2689
Home visits	121

Source: Oncology Unit, HCA

Hyperbaric Oxygen Therapy

The MOH provides free hyperbaric oxygen therapy following diving accidents and also for patients with chronic ulcers. In 2018, a total of 13 patients received care following diving accidents. Out of the 13 patients, 11 successfully completed treatment while two patients defaulted treatment. Among 43 patients with chronic ulcers who received treatment, 30 successfully completed treatment, three defaulted and 10 are still undergoing treatment.

Occupational Health

The objective of Occupational Health Services is to create a healthy and safe working environment, prevent work - related diseases, maintain employees' working ability, functional capacity, and promote the health and wellbeing of all workers in Seychelles.⁶⁰

The Unit undertook a number of activities in 2018, in particular more than 6000 medical examinations were conducted (Table 29).

⁶⁰ Annual Report PHA, 2018.

TABLE 29. MEDICAL EXAMINATIONS CONDUCTED BY OCCUPATIONAL UNIT HEALTH UNIT, 2018

Types of Medical	Number
Routine Medicals	1488
Extension of Services	85
Pension Fund Medicals	245
Referred Medicals	366
Aviation Medicals	137
Visa medicals	41
Medical tests for overseas training	421
Pesticide Handler medicals	28
Food Handler's Medicals	1383
Complete GOP medicals	440
Diving Medicals	22
Sick crew Air Seychelles	1
Review cases	23
Validation of food handlers' medicals	949
Means-Testing Medical	988
Seafarer Medical tests	15
Total	6,632

Source: Annual Report PHA, 2018.

7.6 KEY DEVELOPMENTS IN HOSPITAL SERVICES

Seychelles Hospital continues to improve services offered to the population, some key developments in 2018 of note are:⁶¹

- first bariatric surgery in Seychelles;
- two breast reduction camps;
- introduction of laparoscopic surgery;
- increase in major Otorhinolaryngology (ENT) surgeries, with a reduction in number of patients requiring overseas treatment;
- lithotripsy for kidney stones;
- minimally invasive spine surgery which is associated with quick recovery times; and
- routine pulse-oximetry screening of new-borns for congenital heart disease.

⁶¹ Source: Director of Hospital Services

7.7 KEY DEVELOPMENTS IN PRIMARY HEALTH CARE SERVICES

In 2018, primary health services reported a number of improvements in service delivery:⁶²

- re-opening of in-patient facilities in Anse Royale Hospital;
- further decentralisation of antenatal services;
- partnering with NGOs and private sector to deliver a multitude of outreach screening activities (renal disease screening, NCD screening, eye tests);
- increased availability of specialist consultations at primary health facilities;
- introduction of health screening activities for secondary 5 students;
- provision of family planning services on Saturdays in selected facilities;
- multiple health fairs aimed at health education and promotion;
- introduction of routine hearing test for toddlers and school children; and
- launching of 'Family Nurse' pilot project at Perseverance district.

⁶² Source: Director of Community Services

8. ACHIEVING HEALTH-RELATED SDGS



Seychelles is committed to achieving all SDGs. SDG 3, *Ensure healthy lives and promote wellbeing for all at all ages*, is the goal with a core emphasis on health, and is well aligned with the MOH's vision and mission.

Disease burden and health outcomes are influenced not just by what MOH delivers but also by the social determinants of health - the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. The principles of the Helsinki Statement of Health in All Policies (HiAP) aims to bring intersectoral coordination into the priority actions for the health sector. Locally, there was a pledge in 2016 by all members of the Cabinet of Ministers to mainstream health considerations in all aspects of work in all sectors, since then there has been no formal report of follow up actions. However, many activities for health promoting and prevention conducted by the MOH as well as various NGOs, have strong elements of inter-sectoral coordination.

The World Bank Country Diagnostic Report 2017⁶³ demonstrating high poverty rates in Seychelles has led to healthy debates and interventions to measure multi-dimensional poverty at national and sub-national levels. The first formal report is expected to be produced by the National Bureau of Statistics in 2019, and it is hoped that it will inform the development of targeted interventions.

Seychelles' strong emphasis of provision of public health goods to the entire population, such as treated water, adequate sanitation, maintaining clean air and water quality, widespread access to healthy fish protein, undoubtedly continues to have a strong role in maintaining and mitigating deterioration in overall population health.

Thirteen years of free and compulsory education for all children also act as a potential health multiplier by enabling the population to better take individual responsibility for health and wellbeing.

Table 30 summarises current progress made towards achievement of SDG3 goals. The country is well placed to achieve most of the goals, however, for some indicators there is failure to sustain major achievements secured in the past. This warrants in-depth analysis with inter-sectoral debates and remedial action.

⁶³ World Bank. Seychelles - Systematic Country Diagnostic (English). Washington, D.C.: World Bank Group, 2017.

TABLE 30. PROGRESS IN SDG3

SDG	Description and Relevant Issues in Local Context
3.1	By 2030, reduce the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births. Increasing trends in MMR in recent years. In 2018, MMR of 121, above both SDG and NHSP 2016-2020 targets.
3.2	By 2030, end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality (NMR) to at least as low as 12 per 1000 live births and under-5 mortality (U5MR) to at least as low as 25 per 1000 live births. Despite the year-on-year deterioration of the inter-linked trio of NMR, IMR and U5MR in 2018, compared to 2017, long-term trends are stable. Seychelles has failed to sustain achievement of the SDG 3 NMR target of <12 for the second time (in 2013 and 2018); much progress is needed to meet OECD averages: e.g. IMR 3.9 ⁶⁴
3.3	By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. <ul style="list-style-type: none"> • Newly diagnosed cases of HIV continue to increase annually in Seychelles. New cases of HCV decreased in 2018. Estimating the total PLWHA remains an issue. • Tuberculosis incidence at 15.5 per 100,000 population, lowest in Africa. • Leptospirosis remains an endemic killer – 6 deaths in 2018, an increase over 2017. • Ongoing Dengue outbreak since 2015; increase in reported cases in 2018. • Introduction of Rotavirus and Pneumococcal vaccines into EPI schedule for infants in 2018 can produce significant reductions in disease burden attributable to viral diarrhoea and pneumococcal disease in coming years. • Antimicrobial resistance remains an often-neglected and under-reported issue.
3.4	By 2030, reduce by one third premature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and well-being. <ul style="list-style-type: none"> • Difficulties with estimation of true premature NCD mortality rates in view of under-reporting. • Burden of NCDs partly masked by the double-burden of disease – high numbers of deaths from communicable diseases (AIDS, Pneumonia), producing a falsely low fraction attributable to NCDs. • Ongoing work on pre-existing and new platforms for tackling common health risk factors. • Increase in suicides in 2018 may reflect an underlying increase in mental health burden in society.
3.5	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol. <ul style="list-style-type: none"> • Scale up of harm-reduction services for substance abuse disorders by APDAR in 2018⁶⁵. • Ongoing debates on legal status of cannabis in Seychelles. • Strong political expressions of interest to combat alcohol epidemic⁶⁶
3.6	By 2020, halve the number of global deaths and injuries from road traffic accidents (RTAs). Deaths from RTAs in 2018 was 9.3/100,000 population (1% of total); reducing trend in recent years.
3.7	By 2030, ensure universal access to sexual and reproductive health-care (SRH) services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes. Despite wide availability of SRH services, utilisation and impact appears sub-optimal. Adolescent fertility rates remain high, indicating a need for review and improvements in family planning services; this taken in-light of increasing trends in STIs, hints a rise in unsafe sexual practices, which puts the youth at great risk.
3.8	Achieve universal health coverage (UHC), 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. Traditionally Seychelles has had good UHC, but a recent trend of increasing out-of-pocket expenditure on healthcare noted, indicating a potential for reduced financial risk protection and catastrophic health

⁶⁴ OECD, 2017. Health at a Glance 2017: OECD Indicators (updated February 2018). Paris: OECD Publishing. <http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm>

⁶⁵ APDAR. Annual Report 2018.

⁶⁶ Ministry of Finance, Trade Investment and Economic Planning. State of the Nation Address 2019.

expenditure. The increase in out-bound medical tourism, and utilisation of private healthcare facilities and pharmacies, may account for this.

Improvements in monitoring mechanisms are noted, but equity and quality of the services are still not captured. Improved local National Health Accounts capacity (through WHO) noted in 2016-2017.

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

The low deaths from chronic respiratory diseases are in agreement with Seychelles' reputation for clean air. The PUC provides treated water to over 93% of households already, with over 97% of households using flush toilets, which reduces soil contaminations from faecal matter⁶⁷.

We remain at risk from poor local capacity for routine testing of local and (particularly) imported products for impurities/contaminants, with increasing International trade and incidence of contaminations increasing health risks on the global scene.

3.a Strengthen the implementation of the WHO Framework Convention on Tobacco Control (FCTC) in all countries, as appropriate.

Tobacco use in decline; Seychelles has implemented almost all aspects of the FCTC⁶⁸. Recommend same approach for Alcohol, a more major and increasing health risk in the current context.

3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines.

MOH provides all childhood vaccines free of charge. The trend of increasing costs of medicines and frequent stock-outs of numerous medicines, as well as recurrent interruptions in core lab and imaging services, requires more recognition with considerations of its indirect cost implications. Need for planning and implementation of long-term, sustainable solutions.

3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.

Seychelles has seen gradual increase in public funding for healthcare, increasing as a fraction of GDP from 3.4% in 2015 to over 4% in 2018. Compared to regional and OECD countries, we still fall well below average. The fraction of Government budget allocated to health has seen marginal increases in recent years (to 12%). This, taken in-light of increasing out-of-pocket expenditure on healthcare, shows a need to inquire further on mechanisms for sustainable health financing.

3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

Surveillance and monitoring programmes will need to be extra careful to identify when diseases emerge – as the increasing travel, tourism, and trade provide opportunities for vectors and pathogens to move quickly between countries/regions.

Lessons have been learnt from recent regional threats of Plague and Ebola, as well as the protracted local outbreak of Dengue. The latter half of 2018 saw a confirmed outbreak of Influenza H1N1 (pdm09) pneumonias⁶⁹, and one suspected case of Measles⁷⁰. Discussions are needed on how best to proactively strengthen surveillance and biosecurity agencies to improve country-resilience, particularly in-light of the expected further increase in transmission of these diseases with climate change.

NHSP – National Health Strategic Plan; APDAR – Agency for Prevention of Drug Abuse and Rehabilitation; DSRU – Disease Surveillance and Response Unit.

⁶⁷ National Bureau of Statistics. Seychelles in Figures, 2018.

⁶⁸ UPCCD, MOH.

⁶⁹ Public Health Authority, March 2019

⁷⁰ DSRU Weekly Epidemiologic Report: Week 51, December 2018

LIMITATIONS

There are several limitations to the development of this Report:

- Data availability
There were several issues that limited the availability of data:
 - The Report was developed during the first quarter of the year during which time MOH entities, programmes and units were in the process of developing their own annual reports and data required for the sector report were not readily available.
 - The MOH Annual Statistical Report for 2018 has not been published yet.
 - Information on utilization and coverage of services reflect only data collected from MOH facilities because the private sector does not report to MOH.
- Data quality
The MOH does not have formal processes in place yet for assuring the quality of routine facility data. We note incomplete reporting for data on use of contraceptives from one health facility.

EPILOGUE

Although it contains many stories of extraordinary achievements, this annual health sector performance report for the year 2018 shows disquieting regressions in major public health indicators that should cause all of us to pause and reflect.

Life-expectancy at birth, maternal mortality ratio and infant mortality rate are all showing clear and unprecedented signs of regression. This reversion is pushing our country off its mark and is creating an unwelcome mismatch between the upward trend of economic development and the downward drift in public health indicators. We are seeing it early because we are watching it closely.

The ubiquitous epidemic of NCDs, the re-emergence of communicable diseases, the major woe of the addiction of 6% (6000 people) of the population to illegal drugs appear to be all, in multiple ways, contributing to the regression. These national challenges require urgent, decisive, innovative, evidence-based interventions at all levels of society, especially at the grass root levels where people live, work and play. We must all come together in words and in deeds to mount a concerted cross-sector national response.

The whole of our society, not just the health sector, needs to revolutionize its ways of doing business, in order to better address the current health, educational, social and economic afflictions of the country that converge to further compound each other.

Our society needs to be much more proactive instead of reactive and reach out for solutions on the fields where the root causes of challenges incubate or germinate.

We need to build resilience and transform the environment that yields the deleterious situations we have to confront.

We need to break down the silos and work out effective and lasting synergies that pull resources and efforts towards the same national objectives.

We need major transformations in every sector to work better together. And “together” means planning together, implementing together, monitoring together, evaluating together and readjusting plans, targets and methods together. In isolation, we cannot and we will not, succeed.

In the health sector, that “health centre based” model of primary health care, that “doctor-centred” model, that “8 am to 4 pm” model that has prevailed for the past 40 years, needs to now be reassessed. It is, clearly, not providing all the solutions required for today’s health issues.

While human resources for health are indeed a real challenge, no-one should expect that more human resources for the sector (heaven knows where they will come from!) will necessarily achieve better health results. This is a proven fallacy. In our case, the emphasis

must not be on the quantity but on the quality of individuals and teams who work for the health of our nation.

Managers must manage better, doctors, nurses and allied health professionals must be better at what they do, health programme managers must do better, and so must health educators and promoters and customer relations personnel. And so, must the professionals in other sectors.

Through training and multi-skilling, we clearly need to raise the quality of each and every professional who works for the well-being of our citizens.

If, on the one hand, professionals reap the clear and unyielding political commitment and the population's strong desire for responsive, people-centred services and, on the other hand, policy-makers and service users harvest the abundance of professional goodwill, Seychelles will continue to soar, always higher and taller, after any minor dip.

ANNEX 1. ANALYSIS OF INFANT MORTALITY, 2018

EDITORS: S K PUGAZHENDHI, E SHROFF, G MEIN, A CHETTY
CONTRIBUTORS: M DANG-KOW, J NOURICE, V BRESSON, J DIDON, W ITUEN-UMANAH

Key Points:

- Total of 1650 Live Births were registered in 2018.
- 31 Infant Deaths recorded in 2018 (IMR 18.79 per 1000 live births), increase from previous years, and well above National Health Strategic Plan target of <10.
- Increased IMR directly and significantly contributed to the drop-in life expectancy in 2018.
- 14 Stillbirths were verified by Ministry of Health in 2018, a drop from previous years.
- Two Maternal Deaths recorded in 2018, increasing MMR trend noted in recent years.
- No changes were noted amongst Early and Post Neonatal deaths in comparison to average of recent years, but a major increase in late neonatal deaths were noted in 2018.
- An alarmingly high proportion of infant deaths (32%) were associated with severe congenital anomalies, much higher than International averages.
- Two were births before arrival to a health facility (6.5%); the remainder were all institutional deliveries by midwives.
- Only two infant deaths (6.5%) are known to be infants of mothers who inject drugs.
- One infant death was an HIV-exposed baby (3.2%).
- Three (9.7%) mothers suffered from pre-eclampsia.
- Amongst associated pregnancies with full available records (21 of 31):
 - All except one (95.2%) had accessed antenatal care.
 - All had one or more associated antenatal and/or perinatal risk factors.
 - 20 of 21 (95.2%) were premature deliveries.

There were 31 infant deaths (12 Male, 19 Female) in 2018 amongst 1650 live births (giving an infant mortality rate, or IMR, of 18.79), compared to an average of 21 per year for the period 2013-17 (IMR 13.37). Figure illustrates long-term trends in Maternal Mortality Ratios (MMR, dashed blue line), five-year averages for MMR (solid blue), and IMR (solid red), from 1978 to 2018.

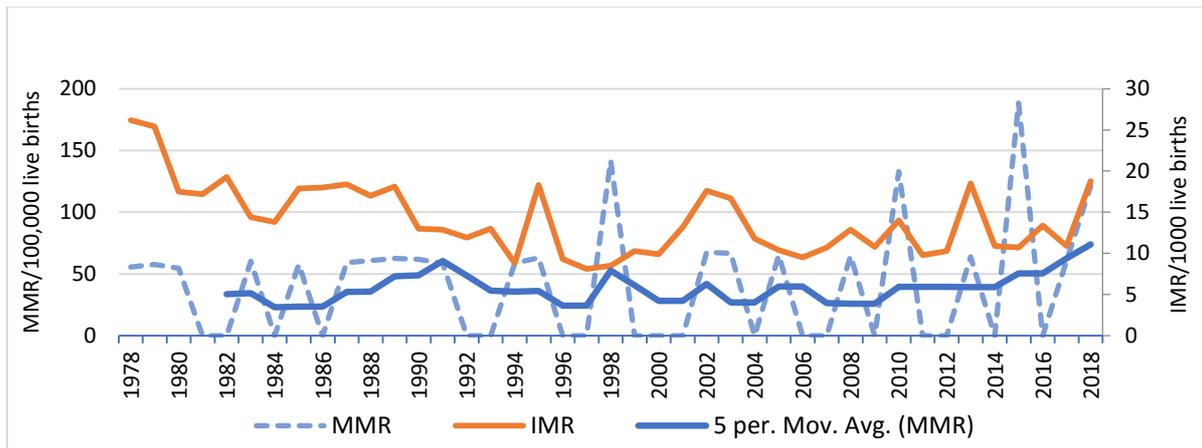


FIGURE 1. IMR (MEASURED AS INFANT DEATHS PER 1,000 LIVE BIRTHS), MMR AND 5Y AVERAGE MMR (AS MATERNAL DEATHS PER 100,000 LIVE BIRTHS) IN SEYCHELLES, 1978-2018. SOURCES: NATIONAL BUREAU OF STATISTICS, STATISTICS SECTION OF MINISTRY OF HEALTH.

The 2018 IMR reflects a record high since 1982, exceeding a recent spike in infant deaths in 2013 (29 deaths, IMR 18.52). This has had a direct and significant negative impact on life expectancy in 2018, although there are no major changes in long-term trends for infant mortality. Fourteen stillbirths were registered by Civil Status in 2018, which is below the 2013-17 average of 16 per year. MMR however, shows an upward trend in the last few years, leading to the historically high 5-year moving average in 2018 described in Figure.

It was notable that the number of early neonatal deaths (within 7 days of birth, 12 in 2018) and post-neonatal deaths (past 28 days, 7 in 2018) were consistent with 2013-17 averages. But late neonatal deaths (death between 7 and 28 days of life, 12 in 2018) showed a significant increase (2013-17 average of 4 per year), as illustrated in Figure below.

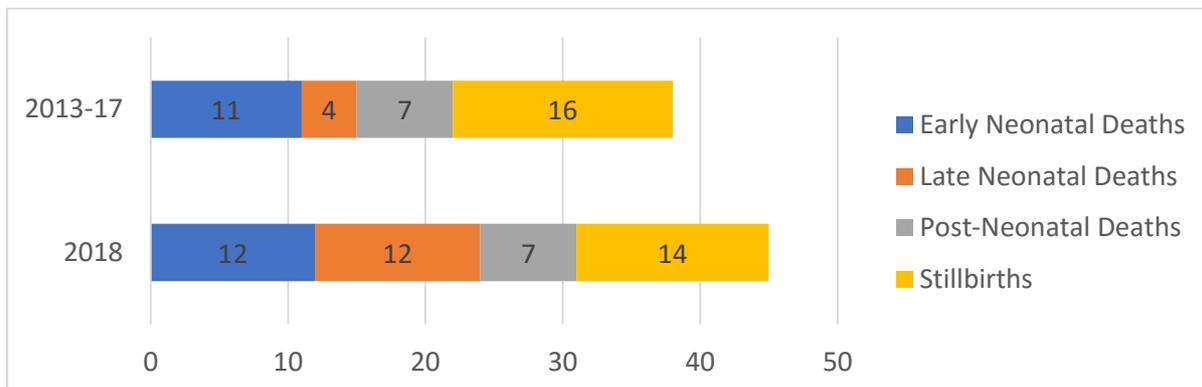


FIGURE 2. BREAKDOWN OF INFANT DEATHS AND STILLBIRTHS IN 2018 (BOTTOM BAR), COMPARED TO 2013-17 (5Y) AVERAGE (TOP BAR). SOURCES: STATISTICS SECTION, MATERNITY WARD AND CIVIL STATUS.

A brief analysis of readily available information on infant deaths in 2018 was done. Twenty-one complete records were available for analysis, with incomplete data for the remainder.

Use of Antenatal Services

Three quarters (75%) of mothers of the infants who died in 2018, had registered for antenatal care prior to 20 weeks of gestation; 25% were late-bookers (registered at or after 20 weeks).

On average, there were eight contacts of the mothers with health professionals during the pregnancies (range 0 to 13). They received an average of three ultrasounds during the pregnancy. This reflects a high level of antenatal service usage amongst these pregnancies.

Two thirds (66%) of the mothers were in employment at antenatal registration. Almost half (45%) were primigravidas (first pregnancy), and amongst the remainder, 75% had a previous history of adverse pregnancy outcomes (miscarriage, still birth or infant death). The average age of this cohort of mothers was 26.6 years, with one pregnancy in a woman aged over 40, and six (27%) teenage pregnancies (mothers aged 19 years and under).

One mother is HIV positive. Two mothers were HCV positive, both of whom were also recorded as injecting heroin users. A third mother has also been noted to use illicit drugs. Two mothers suffered from pregnancy-induced hypertension (PIH) or pre-eclampsia, three mothers from gestational diabetes mellitus (GDM), and one mother suffered from both issues. The pre-eclampsia was a contributing factor in all three infant deaths which followed these pregnancies.

Delivery and Post-Natal Care

Data from pregnancies and deliveries associated with infant deaths have been compared to the general cohort in 2018 on certain key factors in Table 31. Amongst the Infants who died, 26 (84%) received care at Neonatal Intensive Care Unit at some stage of their medical management.

Most deliveries associated with the infant deaths were at Seychelles Hospital. There were two births before arrival to a health facility, one of which was on Praslin. Just over one-third (35%) of delivered babies were by emergency caesarean.

Year 2018	Amongst Total Deliveries (N=1655)		Amongst Deliveries associated with Infant Deaths (N=31)	
Emergency LSCS	289	17.5%	7*	33.3%*
Spontaneous Vaginal Deliveries	1089	65.8%	13*	61.9%*
Births Before Arrival	15	0.91%	2	6.45%
Multiple Pregnancies	24	1.45%	0	0%
HIV Positive	16	0.97%	1	3.23%
Drug 'Addicts'	48	2.90%	2	6.45%
BMI >30 at Booking	206	12.5%	7*	33.3%*
Congenital Anomalies	46	2.78%	10	32.3%
Prematurity	108	6.53%	20*	95.2%*
PIH; Pre-eclampsia	77	4.65%	3	9.68%
Teenage Pregnancies (≤19y)	221	13.4%	6*	27.3%*
Maternal Deaths	2	-	0	-

*Amongst pregnancies whose full records were available (21 of 31);
N = Number; LSCS – Caesarean Delivery; PIH – Pregnancy Induced Hypertension.
Source: Maternity Department Database

TABLE 31 COMPARISONS OF SELECT FACTORS BETWEEN PREGNANCIES ASSOCIATED WITH INFANT DEATHS WITH TOTAL PREGNANCIES IN 2018

Discussion

Congenital anomalies are known to have contributed directly to 10 of the 31 deaths (32%). Infection and sepsis contributed to 23 of 31 deaths (74%). Almost all the infant deaths with available medical case files were premature (20 out of 21), average gestation 31 weeks 4 days (range 28 to 40 weeks).

Although there were overlap between these contributory causes for infant deaths, the fact that about one-third of infant deaths had one or more severe congenital anomalies reflects a much higher rate than the World Health Organisation (WHO) International estimates of 11.3% of neonatal deaths attributable to congenital anomalies (2000-2015)⁷¹.

It is worth noting that Perinatal, Antenatal and Post-natal services are only available in public health facilities in Seychelles and free at point of use. Pregnant women have free access to a comprehensive Antenatal care package across ten clinics on Mahé, Praslin and La Digue, delivered through trained mid-wives. Neonatal Intensive Care services and paediatric inpatient and outpatient services are also readily available across the health system.

⁷¹ WHO <https://www.who.int/news-room/fact-sheets/detail/congenital-anomalies>

ANNEX 2. WHO IDSR RECOMMENDATIONS

R/NO	Recommendations to be implemented
R1	Give mandate to a steering committee to coordinate implementation of the IDSR roadmap and assign responsibility to various actors
R2	Streamline the surveillance system with clear mandate to various units and programs. Avoid duplication of effort e.g. VPD surveillance in EPI and DSRU
R3	Establish a mechanism for controlling introduction of data collection tools at health facility level as well as officially coding approved data tools
R4	Pull training resources between PHA, HCA, MOH Secretariat and partners and make it available for revitalization of IDSR
R5	Republic of Seychelles should adapt the 3rd edition of the IDSR Technical guidelines, trainings modules and comprehensive tools.
R6	The country should use a multi-sectoral approach to decide on the list of priority diseases, condition and public health events under IDSR. Establish reporting requirements, harmonize tools based on data needs and align the data base with the tools.
R7	Conduct training for Doctors on their role in IDSR using multifaceted approach to improve on case detection and reporting. Explore ways of linking IDSR online trainings to mandatory Continuous Professional Development (CPD).
R8	Roll out IDSR Training to health facility level as well as staff at points of entry using new IDSR guidelines and training modules
R9	Establish and train multi-disciplinary multi-sectoral Rapid Response Teams (RRTs)
R10	Streamline Laboratory procurement process to avoid stock outs of reagents and supplies
R 11	Develop Integrated Supportive Supervision tools and conduct Health Facility level supportive Supervision using electronic platform (ODK)
R12	Provide training on IDSR data analysis
R13	Develop and conduct health facility level Data Quality Audit (DQA) at least twice per year
R14	Adapt TORs for IHR National Focal Point (NFP) and consider expanding the to include Points of Entry (POEs), Laboratories, Animal Health, chemical events and any other key stakeholder
R15	Establish a robust health information system that is anchored on an electronic platform (DHIS-2) with capability of tracking performance indicators, generation trends and bulletins.
R16	Establish Quarterly National Surveillance Review Meetings
R17	Improve human resource capacity for surveillance, preparedness and response towards attainment of core capacities required under the International Health Regulations (IHR) 2005

R18	Provide scholarships for some advance trainings e.g. Masters levels for limited skills e.g. Field epidemiologists, entomologists in line with recommended standards.
R19	Establish a one health coordination mechanism and promote information sharing
R20	Develop and sign MOU to enhance coordination, collaboration and information sharing within MOH (human health) and with other relevant sectors like Animal Health, environment, in the context of One Health Approach.
R21	Carry out a National IHR- PVS National Bridging workshop
R22	Establish a community Based Surveillance system to increase the sensitivity of the surveillance system/early warning.
R23	Develop a costed five-year National Action Plan for Health Security (NAPHS) and carry out resource mapping.
R 24	Carry out Vulnerability and Risk Assessment Mapping (VRAM) to determine the priority public health risks.
R25	Carry out Simulation exercises as part of the Monitoring and evaluation of IDSR/IHR performance.
R26	Introduce pre-service IDSR curriculum in public health training institution (NIHSS)
R27	Increase partnerships and resources mobilization to sustain a functional IDSR system.
R28	Shift from the current loose paper-based system of registration of patients in health facilities in order to manage tons of papers generated.

ANNEX 3. NATIONAL EPI SCHEDULE, 2018

Age	Vaccines	Coverage
At birth	Bacille Calmette-Guérin (BCG) Vaccine	97%
3 months	Pentavalent Vaccine Dose 1 <i>(Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus influenzae Type B combined vaccine)</i>	99%
	Oral Polio Vaccine (OPV) Dose 1	-
	Pneumococcal Conjugate Vaccine Dose 1*	34%
	Rotavirus Vaccine Dose 1	99%
4 months	Pentavalent Vaccine Dose 2	-
	Injectable Polio Vaccine (IPV)	99%
	Pneumococcal Conjugate Vaccine Dose 2	25%
	Rotavirus Vaccine Dose 2	99%
5 months	Pentavalent Vaccine Dose 3	99%
	OPV Dose 3	99%
	Pneumococcal Conjugate Vaccine Dose 3	16%
12 months	Yellow Fever Vaccine	99%
15 months	Measles Mumps Rubella (MMR) Vaccine Dose 1	96%
18 months	Diphtheria-Tetanus (DT) Booster 1	95%
	OPV Dose 4	-
6 years	DT Booster 2	97%
	OPV Dose 5	-
	MMR Dose 2	97%
9-11 years	Human Papilloma Virus (HPV) Vaccine <i>(2 Doses, 1 month apart, given to girls only in 2018)</i>	97%
15 years	OPV Dose 6	-
	Tetanus Toxoid (TT)	100%
Pregnant >25 Years	TT Booster	-

Source: EPI Programme, HCA.

*PCV13 was introduced into EPI late 2018.

ANNEX 4. ATTENDANCE BY REGION

Health Centres & Regions	Normal Working Hours		After Normal Working Hours		Dressings	Domiciliary care	School Health	MCH		Ante-Natal	Post natal
	Doctor	**Nurse	Doctor	Nurse				Seen by Doctor	Seen by Nurse		
CENTRAL MAHE	93544	53977	47600	29757	19643	3141	4469	492	8389	9989	519
Victoria	25304	18881	25424	20482	860	0	0	0	0	5635	0
SPDF	3702	4606	0	0	568	0	0	0	0	0	0
English River	56974	24513	22176	9275	14142	2515	3261	459	7240	4354	459
Mont Fleuri	7564	5977	0	0	4073	626	1208	33	1149	0	60
NORTH MAHE	25515	17659	3048	685	6845	1016	1331	159	3188	1366	159
Beau Vallon	20533	11197	3048	685	5465	856	1331	138	2499	1366	138
Glacis	4982	6462	0	0	1380	160	0	21	689	0	21
EAST MAHE	49628	35664	0	0	15183	2619	5966	546	6428	2560	364
Les Mamelles	24336	17370	0	0	7622	1160	2553	218	3117	2560	203
Anse Aux Pins	23385	18294	0	0	7561	1459	3413	328	3311	0	161
Prison	1907	2687	6	110	1013	0	0	0	0	0	0
SOUTH MAHE	33875	32028	14282	14841	17698	1431	1098	178	3597	2737	194
Anse Royale	25280	20648	14282	14841	12090	621	702	86	2104	2119	99
Baie Lazare	4291	6257	0	0	2785	310	204	69	913	315	54
Takamaka	4304	5123	0	0	2823	500	192	23	580	303	41
WEST MAHE	29427	20907	11572	9454	11100	1224	370	147	3220	1344	150
Beoliere	4469	3901	0	0	1425	102	30	0	589	0	30
Port Glaud	2568	3321	353	0	1403	106	165	12	558	0	33
Anse Boileau	20544	11514	11219	9433	7582	984	144	125	1805	1344	76
Souvenir	1846	2171	0	21	690	32	31	10	268	0	11
PRASLIN	27383	30436	6380	7216	9348	1157	1407	127	2750	1250	127
Baie Ste Anne	16897	19338	6380	7200	5257	640	468	103	1878	841	75
Grand Anse	10486	11098	0	16	4091	517	939	24	872	409	52
LA DIGUE	10535	11146	1763	2295	3244	222	54	0	576	221	34
SILHOUETTE	2880	28	33	0	0	0	0	0	0	0	0
TOTAL	272787	201845	84678	64248	83061	10810	14695	1649	28148	19467	1547

N.B: Seen by Nurse**: Mainly for procedures requested for by doctor e.g. : BP, Nebulization, Temperature measurement, Blood Sugar, Injections etc...



Ministry of Health

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