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PREFACE

The Health @ 50 in Guyana: Progress Health Report 1966-2016, chronicles the achievements made in public health as well as the challenges faced during the past fifty (50) years.

This landmark report was prepared by the Pan American Health Organization/World Health Organization (PAHO/WHO) in collaboration with the Ministry of Public Health. The data included in this report were gathered from health reports, statistical bulletins and databases of the Ministry of Public Health, other health-related documents and interviews with key informants.

The mission of PAHO/WHO is "to lead strategic collaborative efforts among Member States and other partners, and promote equity in health, to combat disease, and to improve the quality of, and lengthen, the lives of the peoples of the Americas". There is a long history of PAHO/WHO’s involvement in Guyana. Prior to 1966, services to Guyana were provided through the PAHO/WHO Zone 1 Office which was located in Caracas, Venezuela. In October 1967, PAHO/WHO’s technical cooperation in Guyana was formalized with the establishment of the country office.

During the period 1966 to 2016, there have been ten (10) PAHO/WHO Representatives in Guyana. Through their competent leadership and the technical expertise of many international and local staff and consultants, the country office has contributed tremendously to the improvement of the health and well-being of the Guyanese society.

The organization has worked assiduously in partnership with the Ministry of Public Health, our main technical partner, to address health issues. Other partners include government agencies, international organizations, the University of Guyana and other universities, non-governmental organizations and civil society.
The health profile has changed over the last 50 years and the Organization has been resilient and able to adapt to provide the necessary technical expertise to the country. Our current technical cooperation with Guyana comprises five technical programmes: Communicable Diseases (CD), Non-communicable Diseases (NCD), Determinants of Health and Promoting Health throughout Life (DHPHL), Health Systems and Services (HSS) and Preparedness, Surveillance and Response (PSR).

In reviewing the document, one will note that the country has made significant achievements in the strengthening of the health care system as well as elimination, prevention and control of diseases. We are proud of our contribution to the health of Guyana and we pledge our continued support in addressing the health priorities and reducing health inequity so that collectively we can achieve universal health in Guyana.

Dr. William Adu-Krow
Representative, PAHO/WHO
Guyana
MESSAGE FROM THE MINISTER OF PUBLIC HEALTH

The Ministry of Public Health is pleased to be associated with the development and launch of the Health @ 50 in Guyana: Progress Health Report 1966-2016 which highlights the achievements in health and outlines the challenges that the health sector has faced in ensuring the health and well-being of the people of Guyana.

On this our 50th Anniversary of Independence, it is an opportune time for reflection on the progress that our country Guyana has made in its efforts to secure health for its citizens.

The 1960s and 1970s were, for many developing countries, like Guyana, an era of newly won independence from former colonial powers. This independence was accompanied by an enthusiasm to provide a high-standard of healthcare and other services for our people. From the safe delivery of a healthy baby to the care with dignity of the frail and elderly, the lives of many Guyanese laid in the hands of the health care system and health care services which were not readily accessible for rural families and communities. These health care delivery challenges negatively influenced health outcomes.

Notwithstanding these early challenges, over the years, Guyana’s health care system has been undergoing reform since the approval of the country’s Health Sector Reform Programme 1999-2005. The emerging model for health sector reform was that of decentralization to semi-autonomous bodies, with the Ministry of Public Health relinquishing its role in service delivery. The reform targeted issues such as equity, effectiveness, quality, efficiency, sustainable financing, inter-sector collaboration and community participation.

In 2000, at the start of the decade, the Millennium Development Goals showed how much the perception of health had changed, from a drain on resources to a driver of socioeconomic progress. In that golden decade, governments, including Guyana, made the health agenda a top priority and the unprecedented momentum for better health that marked the start of this century
now continues, with the focus on the achievement of the Sustainable Development Goals as the country prepares to face new and re-emerging diseases.

While there is more work to do, in the ensuing decades, the Ministry of Public Health remains committed to the vision that the citizens of Guyana be among the healthiest in the Caribbean and South America. The Ministry of Public Health will continue to create an enabling framework for the delivery of quality and responsive health services to improve the physical, mental and social wellbeing of the Guyanese people. Under my leadership as Minister of Public Health, the Ministry of Public Health will achieve this by providing leadership, ensuring access to essential services particularly for the poor and fostering enduring partnerships with our stakeholders.

I congratulate the Pan American Health Organization/World Health Organization (PAHO/WHO) on taking the lead in the development of this report and the Ministry of Public Health will continue to be grateful for the technical cooperation PAHO/WHO continues to provide for improved health outcomes in Guyana.

Honorable Dr. George Norton
Minister of Public Health
ACKNOWLEDGEMENTS

The Pan American Health Organization/World Health Organization (PAHO/WHO) expresses sincere thanks and gratitude to all those who participated in the preparation of the Health @ 50 in Guyana: Progress Health Report 1966-2016.

The original idea and initial driving forces were gratefully received.

Special thanks to those who were engaged in the review of the newspaper articles at the National Archives with the aim of collecting pertinent data and pictures on the work of both the Ministry of Public Health and PAHO/WHO in Guyana.

High credit goes to the Ministry of Public Health of Guyana for supporting the development of the report through the provision of health data.

Great appreciation to all those persons who completed questionnaires or were interviewed as key informants and whose valuable inputs were used to enrich the content of this report.

We sincerely thank the Consultant who was responsible for the compilation of this very important and comprehensive document, which captures the achievements as well as the challenges in public health. His commitment has resulted in a solid foundation for future reviews.

Tremendous thanks to the past PAHO/WHO Representatives and Technical Advisors who have contributed in a significant manner to the development of this report.

The very high interest and unwavering support of the PAHO/WHO Guyana Country Office staff, who, despite demanding work schedule and competing priorities, consistently contributed in various meaningful ways, are highly appreciated.

To all others who contributed in some way or the other to the preparation, printing and publication of this report, a hearty thank you.
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ACRONYMS

ACT    Artemisinin Combined Therapy
ADD    Acute Diarrhoeal Diseases
AFC    Alliance for Change
AIDS   Acquired Immune Deficiency Syndrome
ANC    Antenatal Clinic
APNU   A Partnership for National Unity
ARV    Antiretroviral
BCC    Behaviour Change Communication
CAREC  Caribbean Epidemiology Centre
CC     Climate Change
CHO    County Health Officer
CHW    Community Health Worker
CIDA   Canadian International Agency for Development
CMO    Chief Medical Officer
DEC    Diethyl Carbamazine Citrate
DMS    Director of Medical Services
DOTS   Directly Observed Therapy Short Course
EHA    Environmental Health Assistant
EHO    Environmental Health Officer
ELISA  Enzyme Linked Immuno-sorbent Assay
ENT    Ear, Nose and Throat
EPA    Environmental Protection Agency
EPI    Expanded Programme on Immunization
FAO    Food and Agriculture Organization
FCTC   WHO Framework Convention on Tobacco Control
GDP    Gross Domestic Product
GAFDD  Government Analyst Food and Drugs Department
GAHEF  Guyana Agency for Health Education and Food Policy
GFATM  Global Fund to Fight AIDS, Tuberculosis and Malaria
GGMC   Guyana Geology & Mines Commission
GLDA   Guyana Livestock Development Authority
GMO    Government Medical Officer
GPA    Global Programme on AIDS
GPC    Guyana Pharmaceutical Corporation
GPHC   Georgetown Public Hospital Corporation
GRPA   Guyana Responsible Parenthood Association
GS&WC  Georgetown Sewerage & Water Commission
GTZ    German Technical Cooperation
GUM    Genito-urinary Medicine Clinic
GWI    Guyana Water Incorporated
HCIA   Health Conditions in the Americas
HIA    Health in the Americas
Hb     Haemoglobin
HIPC   Highly Indebted Poor Country
HIV    Human Immunodeficiency Virus
HSR    Health Sector Reform
HSRP   Health Sector Reform Paper
HSRU   Health Sector Reform Unit
HV     Health Visitor
IDB    Inter-American Development Bank
IAO    International Atomic Organization
ICT    Immunochromatogen Antigen Card Test
IF     Immuno-fluorescent
IHR    International Health Regulations
IMAI   Adult and Adolescent Illnesses
IMCI   Integrated Management of Childhood Illnesses
IPC    Infection Prevention and Control
JFA    Justice for All
KI     Key Informant
KII    Key Informant Interview
LAC    Latin America and the Caribbean
LEB    Life Expectancy at Birth
LF     Lymphatic Filariasis
LLIN   Long Lasting Insecticide Treated Bed Nets
LMIC   Lower Middle Income Country
MB     Multi-bacillary
M&CC   Mayor and City Council
MDA    Mass Drug Administration
MDG    Millennium Development Goals
MICS   Multiple Indicator Cluster Survey
MMU    Materials Management Unit
MoA    Ministry of Agriculture
MoC    Ministry of Communities
MoH    Minister of Health
MoLG   Ministry of Local Government
MoPH   Ministry of Public Health
MoSP   Ministry of Social Protection
MPT    Multipurpose Technician
NAC    National AIDS Committee
NAP    National AIDS Programme
NAPS   National AIDS Programme Secretariat
NA     Nursing Assistant
NBTS   National Blood Transfusion Service
NCD    Non-communicable Disease
NDC    Neighbourhood Democratic Council
NGO    Non-governmental Organization
NLD    National Laboratory for Infectious Diseases
NHP    National Health Plan
NMET   National Malaria Eradication Programme
NPHRL  National Public Health Reference Laboratory
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<th>Acronym</th>
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<td>NTBP</td>
<td>National TB Programme</td>
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<tr>
<td>NTD</td>
<td>Neglected Tropical Diseases</td>
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<td>NWA</td>
<td>National Water Authority</td>
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<td>ORS</td>
<td>Oral Rehydration Solution</td>
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<td>OSH</td>
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<td>PAHO/WHO</td>
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<td>PB</td>
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<td>PCHA</td>
<td>Presidential Commission on HIV/AIDS</td>
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<td>Plan of Action</td>
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<td>PPGHS</td>
<td>Package of Publicly Guaranteed Health Services</td>
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<td>PPP</td>
<td>People’s Progressive Party</td>
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<td>PRS</td>
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<td>REO</td>
<td>Regional Executive Officer</td>
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EXECUTIVE SUMMARY

Guyana, a former British colony, is located on the northern coast of South America, occupying some 216,000 Km$^2$ (83,000 sq. miles). It is bordered by the Atlantic Ocean to the North East, Suriname to the South East, Venezuela to the North West and Brazil to the South and South West. It is the only English speaking country on the South American continent and the country gained its independence from Great Britain on the 26 May 1966 and has had three (3) governments over that period of time.

The country is divided into four physical ecological zones: a coastal clay belt, a sandy belt, the highlands and an interior plains and savannahs. The coastal belt consists of low lying clay deposits one to four meters below sea level. It has been partially formed by deposits from four of the main rivers of Guyana (Berbice, Demerara, Essequibo and Mahaica) and as such, is very fertile and a major source for agricultural products. The second is the sand belt, which lies immediately south of the coastal zone consists of hilly sand and clay deposits and the intermediate savannahs. The interior plains and savannahs constitute over half of the country’s land mass and includes the Rupununi Savannas. Most of this area comprises tropical rainforests and is rich in mineral deposits. The highlands consist of mountainous terrain and include the Pakaraima and Kanaku mountain ranges.

The population post-independence has fluctuated. Initially, there was a steep (35.6%) increase in the population from the 1960 to the 1980 census, after which there was a (4.3%) decline in the total population at the time of the 1991 census. This was followed by a small (3.8%) increase in population by the 2002 census which was followed by a very small (0.4%) reduction in the size of the population by the time the 2012 census was undertaken. The population of Guyana obtained from the 2012 Population and Housing Census was 747,884 persons.

Guyana’s population has remained relatively young over the 50 year period, with data from 1980 –2002 consistently revealing that over 91% of the population was below the age of 55 years, which is the age of retirement in the public sector. Additionally, more than a third of the population was also consistently below the age of 15 years. However, there has been a reduction
in the proportion of the population under 15 years from 40% in 1980 to 34.8% in 1991 and 35.8% in 2002. In the population aged 60 years and over, there was an initial small negative decline of 0.6% in 1991 when compared to 1980, but a 7.6% increase in 2002.

Guyana has a multi-ethnic population. From 1980 to 2002, there have been significant changes in the ethnic composition of the country. The most pronounced changes have been among the Indo-Guyanese, Amerindians and Mixed populations. Indo-Guyanese had a 16.3% reduction in their proportion of the population (from 51.93% in 1980 to 43.45% in 2002), while the Amerindians had a 72.4% increase in their proportion (from 5.31% in 1980 to 9.16% in 2002) and persons of mixed race a 49.9% increase (from 11.16% in 1980 to 16.73% in 2002). Afro-Guyanese had a marginal 1.9% reduction in proportion (from 30.8% in 1980 to 30.2% in 2002).

Guyana has a mix of public and private health care, with the bulk of health being provided by the free public health system. This public health system was initially set up according to the geographical configuration of the three (3) counties that were inherited from the British. The healthcare system was geared towards ensuring that individuals who were associated with the sugar industry, Guyana’s major economic earner, as well as those associated with the bauxite industry, had access to health services as part of these industries’ corporate social responsibility.

The Public Health Act, enacted in 1953, was passed to deal, inter alia, with the control and treatment of discrete diseases, the registration and licensing of health professionals, provision of sanitation services, the prevention of nuisances and vector control. The public health legislation dealt with health standards which were monitored by the Ministry (through the Central Board of Health) and the municipalities in the Regions at the sub-national levels. The regional or sub-national level entities were empowered to take action on public health infractions within the prescribed national legislation.
In 1986, in the quest to increase efficiency and effectiveness in the delivery of health care in Guyana, the need for the process of decentralization was aligned with the establishment of the Regional Democratic Councils (RDCs). This devolution of the delivery of health care services translated into the RDCs receiving funds through the Ministry of Local Government and Regional Development. Services, including health, have been overseen at the regional level by the RDCs. These councils were made up of representatives and chaired by a Regional Chairman who was the elected leader of the region.

The day-to-day administration of the region is overseen by the Regional Executive Officer (REO), who is accountable for all expenditures, including health, in the region. The REO reports to both the Ministry of Local Government and the Regional Chairman. The Regional Health Officer (RHO), who reports to the REO, manages health activities and compiles the region’s health budget. The RHO also oversees all primary health care in the region and depending on the district, hospital care as well.

In 1998, the country initiated Health Sector Reform (HSR), with the intention of increasing access to a more equitable, efficient, cost effective and sustainable health service. Key to this reform was the reorganization of the MoPH to be responsible for policy formulation, standard setting and monitoring of service delivery by both the public and private sectors and the formation of autonomous agencies especially Regional Health Authorities (RHAs) that would be responsible for service delivery.

Expenditure on Guyana’s healthcare system has varied over the years, from 4.99% per capita Gross Domestic Product (GDP) in 2004 to a high of 5.85% in 2007, then falling to 3.23% in 2010; while the percentage of the budget spent on health had increased from 9.32% in 2008 to 10.34% in 2010. Changes in expenditure have contributed to a change in the disease profile and health outcomes of the country.

Over the 50 year period, the country has faced numerous challenges. Apart from the economic issues of the 1970’s, there was a gap in the availability of human resources, especially health specialists. Due to various challenges, skilled staff migrated to the Caribbean territories as well.
as to North America and Europe. Other challenges included insufficient planning especially operational planning, logistics management, including the procurement of drugs and medical supplies, some political interference in programme management, weak information management systems with inadequate data management and on some occasions, inefficient and ineffective use of resources.

Like most developing countries, Guyana’s economy was affected by the oil crisis of the 1970’s and this had a negative impact on the availability of resources to the social sectors including health. From the late 1980’s, Guyana was classified as a highly indebted poor country (HIPC) and the disease profile reflected such a classification. In the early 1980’s, infectious diseases provided the greatest disease burden for the country. Acute Diarrhoeal Diseases (ADD), vaccine preventable diseases such as poliomyelitis, measles and whooping cough and other infections such as malaria were major health challenges. In response to ADD, gastro units were established at all of the major hospitals in the country and oral rehydration solution (ORS) was administered to children under five years old. Severe anaemia and severe malnutrition, as a result of infections and other causes, were also major health issues.

By the early 1990’s, due to improved sanitation, ADD and its sequelae of malnutrition had significantly reduced, but outbreaks of ADD continued to occur, especially in the hinterland areas of the country. Tuberculosis (TB) began to resurface as the HIV/AIDS epidemic began to manifest itself. Malaria continued to be a major health concern.

By the late 1990’s to the early 2000’s cases of TB, malaria and HIV/AIDS increased, with malaria peaking in 1995 with 84,017 cases and HIV/AIDS with 1,614 cases in 2006. Thereafter, malaria cases declined, to approximately 25,000 cases annually up to 2004 and increasing to about 30,000 until 2014, when there was a 63% reduction in cases to 12,603. After peaking in 2006, HIV/AIDS cases stabilized to around 1,035 in the last 6 years (2010-2015) which was 2 cases less than 1,037 cases in the 6 years prior to peaking (2000-2005). TB continued to increase annually and reached its maximum in 2012 with 725 new cases and thereafter there was a progressive reduction in the number of cases which reached 512 in 2015.
Other communicable diseases of significance during the 50 year period that affected the country were neglected tropical diseases such as leprosy, lymphatic filariasis and dengue. Leprosy was eradicated but the data has shown that from 1997, where the annual number of new cases was around 22, there has been a steady increase in cases which reached 29 in 2015.

In the late 1990s there were data that indicated that Non-communicable Diseases (NCDs) were a major health concern. By the early 2000’s, NCDs were the leading causes of mortality, with ischaemic heart disease, hypertensive disease, diabetes mellitus and cancers being consistently among the top 4 causes of mortality. Suicide was also recognized as being among the top 10 causes of mortality. Some challenges still exist in addressing these disease conditions in a systematic and comprehensive manner.

The Maternal and Child Health (MCH) programme has experienced a mixture of successes and challenges. Pregnant women have utilized the PHC services for their antenatal and postnatal care. At least three quarters of the women who have had live births had attended ANC services during their pregnancy and there was also good postnatal follow-up of infants and children under 5 years. Guyana has had success with vaccination of its children against vaccine preventable diseases as the data reveal that vaccination coverage has risen from 40% in 1980 to over 90% in 2015 at the national level. This high coverage has contributed to the eradication of polio, measles and rubella from Guyana.

The success of the Expanded Programme on Immunization (EPI) in reaching high vaccine coverage has been challenged in its replication in maternal, infant and Under 5 mortality. Maternal Mortality Ratio (MMR) has decreased from 320 per 100,000 in 1990 and by the end of 2014 had fluctuated from 160 to 100 per 1,000 live births. Accelerated interventions are needed for the stabilization of these fluctuations of the MMR. The infant mortality rate has decreased from 60 per 1,000 live births in 1963 to 23 per 1,000 live births at the end of 2014.

Regarding sexual and reproductive health, teenage pregnancy has been high over the 50 year period of this report, varying between 19% and 22% of all pregnancies. Contraceptive use by women of childbearing age has been low, with injectables being the most preferred method.
While condom use as a contraceptive is perceived to be low, it is a cause for concern in a country with a high HIV prevalence.

Abortion became legal in Guyana in 1995 with the Act stipulating the maturity of pregnancy (gestational weeks) within which an abortion would be allowed and who could perform it (Termination of Pregnancy Act). After the Act was passed, according to the data reviewed, approximately 2,268 abortions were reported. However, during the period 1997 to 2007, there were reductions in the number of cases reported. In 2005, the MoPH reported 212 cases of abortions.

Guyana will need to be prepared to face possible challenges in the delivery of health care services to its citizens. In order to do this, the country should endeavor to work towards the achievement of the Global and Regional health goals such as the Sustainable Development Goals, Universal Health Coverage and the sustained implementation of the Alma Ata Declaration 1978 to ensure health for all its citizens.

In the coming years, the Pan American Health Organization/World Health Organization will support the country with implementation of the policies and interventions to achieve the Global and Regional health targets. Below are some key considerations to commence this process:

- Strengthen the steering role of Central Ministry of Public Health to include policy coordination, planning and monitoring and evaluation of activities.
- Continue Health Sector Reform to fully implement the Regional Health Authority Act 2005 or strengthen the Regional Democratic Councils.
- Develop Costed Implementation Plans with a Monitoring and Evaluation Framework related to the development of Strategic Plans.
- Strengthen the Planning Unit with Health Planners with different areas of expertise including strategic planning, policy formulation, human resources and research.
- Develop and implement a comprehensive health information system with the requisite human and financial resources for sustainability.
- Strengthen capacities for the full implementation of the International Health Regulations.
- Establish a Human Resource Department at the MoPH.
• Ensure that Health Promotion is cross-cutting in all technical and programmatic areas.
• Ensure the efficient and effective use of all resources including financial and human.
• Encourage and support the development of research, including operational research, among staff.
Chapter 1
Introduction
CHAPTER 1: INTRODUCTION

1.1 Background

Guyana became independent from Great Britain in 1966 and since then has had three (3) different political parties governing the country: the People’s National Congress (PNC) from 1966–1992, the People’s Progressive Party (PPP) from 1992-2015 and the Coalition Government comprising - A Partnership for National Unity (APNU), the Alliance for Change (AFC), the Working People’s Alliance (WPA) and the Justice for All Party (JFP) from May 2015.

Each of these governments has contributed to the health of the nation as they were responsible for the country’s health system and delivery of health care to its citizens. There have been achievements and challenges in health under the stewardship of each of the governments. Each government has contributed to the nation’s health and this document will not ascribe health outcomes to any particular one, but instead will chronicle the changes in health status as they occurred over the period 1966-2016.

In the past, fires have destroyed a significant amount of records inclusive of important data, which has made the compilation of this report somewhat challenging. However, as outlined in the methodology described below, other methods of data gathering have been executed to augment these gaps.

1.2 Methodology

A retrospective study was done utilizing qualitative and quantitative data. The data were collected using the following approaches:

1. Key Informants’ Interviews (KII) using structured questionnaires
2. Desk reviews
3. Analyses of information from major databases of the Statistical Unit and some vertical programmes of the MoPH
1.3 Key Informants’ Interviews

Structured, qualitative and quantitative interview questionnaires were developed (Appendices I and II). The assumption was that the key informants would be able to provide information that may not have been documented, especially for the first twenty five (25) years of the period and also point to sources of information outside of the MoPH that could be reviewed.

Interviews were conducted with a wide cross section of personnel including former Ministers of Health (MoH), current Minister of Public Health (MoPH), Permanent Secretaries (PS), Chief Medical Officers (CMOs), past PAHO/WHO Representatives (PWRs) and various technical heads of programmes (Appendix III). A total of thirty seven (37) interviews were conducted and recorded, with an average time of one (1) hour allocated for each interview. In addition, three completed questionnaires were submitted by past PWRs. However, from the early interviews with informants who were a part of the health system from the earlier time period, common themes were discerned.

While the questions in the instruments were standard, some variations of the questions were asked of different persons especially when the same themes were gleaned from a number of previous interviewees. For example, concerning the organization of the health system, some persons were asked to focus on its organization according to their discipline such as nursing, labs, physiotherapy; while others were asked to focus on their roles within the health system.

1.4 Desk Reviews

Data sources included statistical bulletins of the MoPH, annual reports from all departments, newspaper articles from the national archives, budget speeches, documents from international partners and internet searches. Key Informants (KIs) were asked to suggest other sources of data and to provide copies of any relevant documents that they possessed that could be helpful to the process.
1.5 Analyses of Databases

The MoPH is in possession of a number of databases, some of which were developed in the older versions of Epi Info, on which data were backed up. The older databases were accessed and analyzed.

All records from the Statistical Unit, MoPH, were reviewed and summary tables of different health outcomes were found. Some of these tables were compared with data from some of the statistical bulletins and found to be the same for equivalent years. In cases where there were variations, these were noted. In that regard, the databases were used as the primary source of data, where available, in this document. In other cases, different reports including policies and legislations supporting the relevant areas were utilized. Data from some databases, e.g. the revised HIV Case-based Surveillance Database, were exported into the Statistical Package for Social Sciences and analyzed using that software.

1.6 Limitations of the Methodology

The timeframe for developing and implementing the methodology has had a bearing on the methodological approach to obtaining more extensive data and analyses to compile this document. In some instances, there were variations with some of the published data, however, these variations only affected data gathered from the early 2000’s to the present. In these instances, trends were considered on the assumption that they did not affect the analyses.

A total of thirty seven (37) interviews were conducted and recorded, with an average time of one (1) hour per interview. The researcher was present at all interviews and therefore, in-depth qualitative analyses were not applied during the review and transcription of the tapes to identify all the themes. For example, in the identification of the top 10 diseases and causes of mortality, quantitative data were initially obtained in the early years, but in subsequent years, the diseases and causes of mortality were presented qualitatively, i.e. they were ranked 1st, 2nd, 3rd, etc. excluding quantitative data. This resulted in some gaps in terms of demonstrating trends.
This report covers a broad range of health challenges, but is not a treatise on all the diseases that occurred in Guyana during the period. While all the diseases mentioned are not given the same in-depth descriptions, some priority infectious diseases such as malaria, TB and HIV/AIDS as well as Non-communicable Diseases (NCDs), such as cancers, were described in more detail.
Chapter 2
Country Context
CHAPTER 2: Country Context

2.1 Geography

Guyana, a former British colony, is the only English speaking country in South America. The country is located on the northern coast of the South American continent, with the Atlantic Ocean forming its north eastern boundary, Venezuela its north western, Brazil its south western and southern and Suriname its south eastern boundaries respectively (Figure 1).

Figure 1: Map of Guyana Highlighting Administrative Subdivisions and Border Relations
Guyana is approximately 216,000 Km$^2$ (83,000 miles$^2$) and is divided into four physical ecological zones: a coastal clay belt, a sandy belt, the highlands and an interior plains and savannahs. The coastal belt consists of low lying clay deposits one to four meters below sea level. It has been partially formed by deposits from four of the main rivers of Guyana (Berbice, Demerara, Essequibo and Mahaica) and as such, is very fertile and a major source of agricultural products. The sandy belt lies immediately south of the coastal zone, consists of hilly sand and clay deposits and intermediate savannahs. The interior plains and savannahs constitute over half of the country’s land mass and includes the Rupununi Savannas. Most of this area comprises tropical rainforests and is rich in mineral deposits. The highlands consist of mountainous terrain and include the Pakaraima and Kanaku mountain ranges (Figure 2).

**Figure 2: Physical Ecological Zones**
The country was originally called British Guiana and the name was changed to Guyana after it gained its independence from Great Britain in 1966. In 1970 the name was changed to the Cooperative Republic of Guyana. Prior to 1970, the country was divided into three counties, Berbice, Demerara and Essequibo. From 1980, it was divided into 10 Administrative Regions, numbered Regions 1 – 10 (Table 1).

Table 1: The Administrative Regions

<table>
<thead>
<tr>
<th>Regional #</th>
<th>Name of Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Barima-Waini</td>
</tr>
<tr>
<td>2</td>
<td>Pomeroon – Supenaam</td>
</tr>
<tr>
<td>3</td>
<td>Essequibo Islands – West Demerara</td>
</tr>
<tr>
<td>4</td>
<td>Demerara – Mahaica</td>
</tr>
<tr>
<td>5</td>
<td>Mahaica – Berbice</td>
</tr>
<tr>
<td>6</td>
<td>East Berbice – Corentyne</td>
</tr>
<tr>
<td>7</td>
<td>Potaro – Siparuni</td>
</tr>
<tr>
<td>8</td>
<td>Cuyuni – Mazaruni</td>
</tr>
<tr>
<td>9</td>
<td>Upper Takutu – Upper Essequibo</td>
</tr>
<tr>
<td>10</td>
<td>Upper Demerara – Berbice</td>
</tr>
</tbody>
</table>

2.2 Demographics

Guyana’s population post-independence has fluctuated. Initially, there was a steep increase (35.6%) in the population from the 1960 to the 1980 censuses, after which there was a 4.3% decline in the total population at the time of the 1991 census. This was followed by a small (3.8%) increase in numbers by the 2002 census which was followed by a very small (0.4%) reduction in the size of the population by the time the 2012 census was undertaken (Figure 3).
Figure 3: Population Covering Pre and Post-Independence

Guyana’s population has remained relatively young over the 50 year period, with data from 1980 – 2002 (age group and sex disaggregated data unavailable for 2012) consistently revealing that over 91% (91.9% in 1980, 91.7% in 1991, 91.3% in 2002) of the population was below the age of 55 years, which is the age of retirement in the public sector. Additionally, more than a third of the population was also consistently below the age of 15 years; however, there has been a reduction in the proportion of the population under 15 years from 40% in 1980 to 34.8% in 1991 and 35.8% in 2002 (Table 2). In the population aged 60 years and over, there was an initial small negative decline of 0.6% in 1991 in comparison to 1980, but a 7.6% increase in 2002 compared to 1980 and an 8.3% increase in 2002 compared to 1991 (Table 2).
### Table 2: Population Distribution by Age Group and Sex (1980 -2002)

<table>
<thead>
<tr>
<th>Age group</th>
<th>1980</th>
<th>1991</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>0-4</td>
<td>48,986</td>
<td>48,675</td>
<td>97,662</td>
</tr>
<tr>
<td>10-14</td>
<td>53,146</td>
<td>52,300</td>
<td>105,446</td>
</tr>
<tr>
<td>15-19</td>
<td>47,701</td>
<td>48,974</td>
<td>96,675</td>
</tr>
<tr>
<td>20-24</td>
<td>37,538</td>
<td>39,793</td>
<td>77,331</td>
</tr>
<tr>
<td>25-29</td>
<td>28,499</td>
<td>29,075</td>
<td>57,574</td>
</tr>
<tr>
<td>30-34</td>
<td>21,583</td>
<td>22,512</td>
<td>44,095</td>
</tr>
<tr>
<td>35-39</td>
<td>16,381</td>
<td>17,235</td>
<td>33,616</td>
</tr>
<tr>
<td>40-44</td>
<td>13,911</td>
<td>14,371</td>
<td>28,282</td>
</tr>
<tr>
<td>45-49</td>
<td>12,664</td>
<td>13,139</td>
<td>25,803</td>
</tr>
<tr>
<td>50-54</td>
<td>11,487</td>
<td>11,475</td>
<td>22,962</td>
</tr>
<tr>
<td>55-59</td>
<td>9,265</td>
<td>8,965</td>
<td>18,230</td>
</tr>
<tr>
<td>60-64</td>
<td>6,727</td>
<td>6,758</td>
<td>13,485</td>
</tr>
<tr>
<td>65-69</td>
<td>6,291</td>
<td>6,484</td>
<td>12,775</td>
</tr>
<tr>
<td>70-74</td>
<td>3,615</td>
<td>3,900</td>
<td>7,515</td>
</tr>
<tr>
<td>75+</td>
<td>3,967</td>
<td>5,427</td>
<td>9,394</td>
</tr>
</tbody>
</table>

Source: Guyana Population and Housing Census 2002, Bureau of Statistics

The Guyana Bureau of Statistics posits that the change in the population size from 1980 to 2012 was mainly due to outward migration (Guyana national censuses 2002 and 2012). This was supported by the population pyramids of 1991 and 2002 where there was a widening of the base of the population pyramid (Figure 4). This widening of the base of the population pyramid could have also been due to an increased growth rate, which was not borne out by the data as seen in figure 5, where there has been very minimal growth and in some cases negative growth over the time period. A plausible explanation could have been that there was a net outward migration of the adult population.
Figure 4: Population Pyramids (1991 and 2002)

Source: Guyana Population and Housing Census Data

From 1966, there was a steady decline in the growth rate of Guyana’s population and in 1991 and 2014 there was actually negative growth (Figure 5).

Figure 5: Population Growth Rates (1831-2012)

Source: Guyana Population and Housing Census Data
From 1980, the country was divided into ten administrative regions and there were population shifts over the thirty six years that the country has enjoyed its Republican status (Figure 4). The Guyana Bureau of Statistics subdivided the country into two demographic entities; the coastal and hinterland regions. The coastal regions comprise Regions 2, 3, 4, 5, 6 and 10, while the hinterland regions comprise Regions 1, 7, 8 and 9.

**Figure 6: Population Changes in Coastal and Hinterland Areas (1980 – 2012)**

The coastal regions have seen an overall reduction in population from 1980 compared to the time the 2012 census was conducted, while the hinterland regions have seen an overall increase in population numbers over the same period (Figure 6). The reduction in numbers was more pronounced in regions 4, 5 and 6 while the increases were more noticeable in regions 7, 8, 9 and to a smaller extent Region 1 (Figure 7). Changes in the regional distribution has had an impact on the health of the population since the hinterland regions have very difficult terrain, resulting in issues of inequity in the access and provision of health care services.
2.3 Ethnic Distribution of the Population

Guyana is a land of six races. From 1980 to 2002, there have been significant changes in the ethnic composition of Guyana’s population. The most pronounced changes have been among the Indo-Guyanese, Amerindians and Mixed populations. Indo-Guyanese had a 16.3% reduction in their proportion of the population (from 51.93% in 1980 to 43.45% in 2002); while the Amerindians had a 72.4% increase in their proportion (from 5.31% in 1980 to 9.16% in 2002) and persons of mixed race a 49.9% increase (from 11.16% in 1980 to 16.73% in 2002). Afro-Guyanese had a marginal 1.9% reduction in proportion (from 30.8% in 1980 to 30.2% in 2002) [Table 3].

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>2002</th>
<th>1991</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number and percentage (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afro-Guyanese</td>
<td>227,062 (30.2)</td>
<td>233,465 (32.26)</td>
<td>234,094 (30.8)</td>
</tr>
<tr>
<td>Amerindians</td>
<td>68,675 (9.16)</td>
<td>46,722 (6.46)</td>
<td>40,343 (5.31)</td>
</tr>
<tr>
<td>Chinese</td>
<td>1,396 (0.19)</td>
<td>1,290 (0.18)</td>
<td>1,864 (0.25)</td>
</tr>
<tr>
<td>Indo-Guyanese</td>
<td>326,277 (43.45)</td>
<td>351,939 (48.63)</td>
<td>394,417 (51.93)</td>
</tr>
<tr>
<td>Mixed race</td>
<td>125,727 (16.73)</td>
<td>87,881 (12.14)</td>
<td>87,764 (11.16)</td>
</tr>
<tr>
<td>Portuguese</td>
<td>1,497 (0.2)</td>
<td>1,959 (0.27)</td>
<td>3,011 (0.04)</td>
</tr>
<tr>
<td>White</td>
<td>477 (0.06)</td>
<td>308 (0.04)</td>
<td>779 (0.1)</td>
</tr>
<tr>
<td>Other</td>
<td>112 (0.01)</td>
<td>107 (0.01)</td>
<td>294 (0.04)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>751,223 (100)</strong></td>
<td><strong>723,671 (100)</strong></td>
<td><strong>759,566 (100)</strong></td>
</tr>
</tbody>
</table>

Source: Guyana Population and Housing Census 2002, Bureau of Statistics

NB: Percentages do not add up to 100 due to rounding of numbers and ethnic breakdown of the population is not available in the 2012 census.

2.4 Economic Performance

Guyana’s economy is based on its abundant natural resources - bauxite, gold, diamond and lumber, including a fertile productive soil; water resources caused by many rivers and a continental shelf off the Atlantic Coast. The gold and diamond industries have been the main source of foreign exchange.

From the time of independence until the mid-1980s, the country experienced a very low per capital Gross Domestic Product (GDP). From around 1986, there was a progressive increase in GDP, which continued up to 2014 (Figure 8).
During the years of extremely low GDP, Guyana was classified as a Highly Indebted Poor Country (HIPC), but by 2015, per capita GDP had increased to US$3,724 (Table 4). This change in economic gains has resulted in an improvement in the country’s ranking, whereby it is currently ranked as a Lower Middle Income Country (LMIC). With the improvement of its economic rating from HIPC to LMIC, Guyana was able to increase its budgetary allocation for health.

Table 4: GDP Per Capita in US$ (2006-2014)

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP at current basic prices (US$M)</th>
<th>GNP at current basic prices (US$M)</th>
<th>Per capita GDP at basic prices (US$)</th>
<th>Per capita GNP at basic prices (US$)</th>
<th>Gross National Disposable Income (USM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2763</td>
<td>2788</td>
<td>3724</td>
<td>3757</td>
<td>3384</td>
</tr>
<tr>
<td>2014</td>
<td>2676</td>
<td>2650</td>
<td>3595</td>
<td>3559</td>
<td>3261</td>
</tr>
<tr>
<td>2013</td>
<td>2611</td>
<td>2583</td>
<td>3248</td>
<td>3213</td>
<td>3170</td>
</tr>
<tr>
<td>2012</td>
<td>2507</td>
<td>2506</td>
<td>3148</td>
<td>3146</td>
<td>3158</td>
</tr>
<tr>
<td>2011</td>
<td>2265</td>
<td>2256</td>
<td>2869</td>
<td>2857</td>
<td>2880</td>
</tr>
<tr>
<td>2010</td>
<td>1970</td>
<td>1983</td>
<td>2514</td>
<td>2530</td>
<td>2644</td>
</tr>
<tr>
<td>2009</td>
<td>1777</td>
<td>1760</td>
<td>2281</td>
<td>2260</td>
<td>2324</td>
</tr>
<tr>
<td>2008</td>
<td>1732</td>
<td>1717</td>
<td>2260</td>
<td>2241</td>
<td>2177</td>
</tr>
<tr>
<td>2006</td>
<td>1289</td>
<td>1246</td>
<td>1694</td>
<td>1637</td>
<td>1579</td>
</tr>
</tbody>
</table>

Source: Guyana Bureau of Statistics
From negative GDP growth rates in 1990, there were sharp increases from 1991, reaching a maximum of 8.5% in 1994 following which there were fluctuations in growth, falling to a value of 4.4% in 2015 (Figure 9).

**Figure 9: Constant GDP Real Growth Rates at 1988 Prices (1990-2015)**

![Graph showing GDP growth rates from 1990 to 2015](chart.png)

Source: Guyana Bureau of Statistics

Guyana’s economy has traditionally been supported by significant participation of males in its labour force with close to 80% of male participating over the period under review. From a low of less than 20% of female participation in the labour force in the 1970’s, female participation reached its zenith in 1992 with almost 40% participation. However, female participation dipped to approximately 30% by the time of the 2002 census (Figure 10).
With the increased participation rates of females, the unemployment rates of the country have also seen a sharp reduction. At the time of the 1970 census, total unemployment rates, for both males and females, were approximately 15%. Females had an almost 18% unemployment rate while the rates were below 15% for men. By the time of the 2002 census, overall unemployment was closer to 10%, and in males it had dropped to under 10%. There was also a reduction among women, where rates were closer to 15% (Figure 11).
2.5 Life Expectancy

Life expectancy in Guyana has increased over the years since the country gained independence. According to PAHO/WHO Health in the Americas, life expectancy in Guyana was 62.4 years between 1965 and 1970 and 67.9 years between 1970 and 1975. In 1992, it was estimated at 67.7 years for females and 62.1 years for males while in 1997, it was 64.4 years, 64.8 years in 1998 and 64.4 years in 1999. For the period 1997-1999, Life Expectancy was 61.5 years for males and 68.2 years for females.

According to the World Bank, the life expectancy in Guyana was 64 years in 1990 and in 2014 was 66 years. Life expectancy in Guyana has been below the average for Latin America and the Caribbean (LAC), where life expectancy was 69 years in 1996 and 75 years in 2014. In contrast, life expectancy in Guyana was above that of all lower middle income countries (LMIC) up to 2011, as life expectancy in the LMICs was 62 years in 1996 and 66 years in 2011.
2.6 Health and Human Resources

The situation regarding Health and Human Resources (HHR) in Guyana has been a rather interesting one as the data suggest that in the earlier years, there were more HHR as compared to the later years. According to PAHO/WHO Health in the Americas, in 1968, Guyana had a ratio of 5.8 doctors per 10,000 population and this was reduced to 1.7 by 1976. There were 8.7 nurses and 6.9 nursing auxiliaries per 10,000 population respectively in 1976. By 1993, the ratio of physicians to 10,000 population had increased to 3.3, while for nurses and nursing auxiliaries it had increased to 9.2 and 13.6 respectively. By 1993, nurses’ aides were employed and their ratio was 5.0 per 10,000 population.

2.7 Health Expenditure

Guyana’s expenditure for health was influenced by its economic performance. Post-independence, there was a reduction in health expenditure as spending in 1967 was 13.0% compared to 26.0% in 1963. In 1975, government expenditure was 5.2%, while in 1987 the expenditure was less than 4% of the recurrent budget. Capital expenditure increased to 8.5% in 1992 and 10.6% in 1993 and in 1999, 12.0% of government’s budget was allocated to health (HIA 1967-2002). In 2008, the health expenditure as a percentage of the National Budget was 9.3% and reached a maximum peak of 9.9% in 2009 and 2015 was 9.5% (Bureau of Statistics and Ministry of Finance).
Chapter 3
Health Systems and Services
CHAPTER 3: HEALTH SYSTEMS AND SERVICES

3.1 Evolution of the Health System Structure

Guyana’s health system comprises a large public sector and a small private sector. Prior to its independence in 1966, Guyana inherited from the British a public health system that was structured along the lines of its three county system, (Essequibo, Demerara and Berbice), of administration. There was a central Ministry of Health (MoH) headed by a Minister of Health (MoH) who was supported by a Permanent Secretary (PS) and Director of Medical Services (DMS). At the county level, each county was headed by a County Health Officer (CHO).

In the public sector, the sugar industry, as well the bauxite industry, as part of their social responsibility to the communities in which they were located, supported the provision and delivery of health services. In the mid 1970’s, the country decided to pursue a decentralized political and administrative system, including the health care system. In 1976, there was the piloting of this regionalization with the formation of 6 administrative regions. In 1980, with the passage of the Local Democratic Act, ten administrative regions were constituted, each governed by a Regional Democratic Council (RDC) which was responsible for delivery of services at the regional level.

3.2 Rationale for Decentralization of Health

At the time of independence, the MoH inherited a health care system that was structured to deliver more curative rather than preventative health. The health care system at that time demonstrated that the system was inefficient and ineffective. Some of the factors that accounted for the state of the health system at that time included:

1. Fragmentation and lack of coordination of health care service in various programmatic areas
2. High cost of providing ambulatory care, including Maternal and Child Health (MCH) services
3. Underutilization of district hospitals
4. Concentration of hospital services in the major municipalities
5. The need for decentralized decision making

It was perceived that “services at the periphery (county) were disintegrated, weak and underutilized with citizens bypassing these services and accessing those at the apex of the system, that is, the Georgetown Hospital (GH). This contributed to the inability of GH to function as a secondary care facility. Other factors were:

1. Health units functioned on a vertical basis with a dichotomy between preventative and curative programmes.
2. Inadequate and insufficient distribution of resources, human and financial, between curative and preventive services and also urban and rural areas.
3. Inadequate materials and supplies at peripheral facilities.
4. Inadequate human resource including professional, auxillaries and middle level personnel.
5. A highly centralized administrative system with weak support systems.
6. Inadequate and inaccurate information.

3.3 Health Planning

In 1965, the Government established a National Planning Commission which encouraged sectoral planning. This was followed by the establishment of a Planning Unit, in 1969, by the MoH. This unit was staffed with persons having various technical skills and a ten year National Health Plan (NHP) was developed in 1970 that covered the period 1970-1980. This plan was further incorporated into the National Development Plan of 1972-1976.

The NHP 1970-1980 outlined the following policies:

1. To ensure the provision of a high quality of basic and primary health services to all citizens
2. To ensure an equitable distribution of health services, in order to ensure a balance between rural and urban areas
3. To urge people to utilize health facilities available in their own community, as well as for appropriate levels of care in order to avoid unnecessary overcrowding and poor utilization of more central and complex facilities
4. To accept responsibility for dealing with health problems and situations which were beyond the capacity of the individual to solve
5. To eliminate the dichotomy of preventive and curative health services by integrating these services at all levels of the health care system
6. To provide free basic preventative health services such as MCH (including pre-natal care, post-natal care, care of pre-school and school child), dental care, nutrition, insect vector control, and basic environmental sanitation
7. To develop the most appropriate health care system which will facilitate or make possible the provision of an adequate and good quality health care

Although the NHP 1970-1980 was a comprehensive document, one weakness included the need to address the problems of small communities in remote, unserved and underserved communities. In addition, there were organizational challenges at the central and regional levels and limitations regarding inter-sectoral and inter-ministerial cooperation. In 1979, through a US$8.8 million loan from the Inter-American Development Bank (IADB) with counterpart funding of US$2.1 million from the Government of Guyana (GOG), there was a reorganization of the health sector. Objectives of this reorganization included:

1. Expansion and improvement of health care coverage through the addition of new health facilities and better utilization of the existing infrastructure.
2. Reorganization of the health care delivery system through a regionalized system of accountability and referrals to provide access to basic and some specialized services, especially in the case of scattered rural and interior communities.
3. Development of management and information systems, capacity building of personnel and improved technical cooperation.
3.4 Health Sector Reform

In 1966, there were no health posts, 82 health centres, 12 district hospitals and 3 regional hospitals. By 1984, there were 6 health posts, 176 health centres, 18 district hospitals, 3 regional hospitals, 2 specialist hospitals and the National Referral Hospital in Georgetown.

In September of 1998, a cabinet paper was presented proposing Health Sector Reform (HRS). This Health Sector Reform Paper (HSRP) proposed services that were more accessible, equitable, efficient and effectively being delivered to all the citizens of the country. As a result, a Health Sector Reform Bill/Project was drafted and a Health Sector Reform Unit (HSRU) with its own head was established to develop, plan and implement the reform.

The Health Reform included:

1. Decentralization of the central Ministry of Health with a steering function
2. Efficient materials management
3. Sustainable financing with investment in PHC
4. Greater private sector involvement
5. Effective information system to guide decision making
6. Strengthened human resources
7. Effective communication between government and community
8. Strengthened health legislative framework

It was envisioned that there would be devolution of service delivery to incorporate public agencies with independent authority. Such agencies included the Georgetown Public Hospital Corporation (GPHC), Regional Health Authorities (RHAs) and the Materials Management Unit (MMU). It was projected that authority would be delegated to other agencies to coordinate and manage agreed programmes and projects addressing specific health needs. For example, cancer care by the Cancer Board, HIV/AIDS by the National AIDS Programme Secretariat and Mental Health by the Mental Health Board. These would all be regulated by the necessary legislation.
In this formulation, the MoH retained “residual power” that could be enacted in cases of emergencies, failure (by agencies) to execute fiduciary responsibility, non-compliance with regulatory requirements, and any criminal acts. The MoH would only be responsible for setting overall health policies in the public sector and for regulating delivery of services in both public and private sectors.

In the decentralization of service delivery, primary and secondary health services were to be devolved to the RHAs. Other proposed changes included:

a. Devolution of authority for the Georgetown Public Hospital Corporation to a statutory board, with the MoH relinquishing day to day management of the institution to the board.

b. Establishment of an autonomous Materials Management Unit.

c. Development of a Package of Publicly Guaranteed Health Services (PPGHS)

The HSRP was partially implemented. Achievements included:

1. The Georgetown Public Hospital was incorporated into the Georgetown Public Hospital Corporation (GPHC) and managed by a board.

2. A Hospital Regulations Act was ratified and the MoH commenced inspections and licensing of both public and private hospitals.

The government is currently in a process of obtaining evidence for informed decision making to strengthen the health system. In the interim, the MoPH is still integrally involved in policy formulation and development, service delivery and regulation of service delivery in both public and private sectors.

Public health care is free of cost, while private health care is based on fee payment with most of it being out of pocket. There is a reimbursable national insurance scheme, which covers up to 75% of costs for some conditions. Additionally, there is also a small private health insurance market which is usually covered by companies as part of group health packages.
According to the Chief Medical Officer (CMO) Annual Report 2013, there were 310 health facilities with the majority being in Region 4, followed by Region 1. Region 4 has the largest number of health centres and hospitals, while Region 1 has the most health posts (Table 5).

### Table 5: Distribution of Health Facilities

<table>
<thead>
<tr>
<th>Institution</th>
<th>Reg1</th>
<th>Reg2</th>
<th>Reg3</th>
<th>Reg4</th>
<th>Reg5</th>
<th>Reg6</th>
<th>Reg7</th>
<th>Reg8</th>
<th>Reg9</th>
<th>Reg10</th>
<th>Total</th>
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<td>13</td>
<td>10</td>
<td>1</td>
<td>7</td>
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<td>13</td>
<td>32</td>
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<td>Health Centres</td>
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<td>11</td>
<td>16</td>
<td>26</td>
<td>16</td>
<td>17</td>
<td>2</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
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<td>6</td>
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<tr>
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<tr>
<td>Company Hospitals</td>
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<td>Geriatric Hospitals</td>
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<td>0</td>
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<td>1</td>
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<td>Rehabilitation Centres</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>44</td>
<td>32</td>
<td>33</td>
<td>46</td>
<td>19</td>
<td>29</td>
<td>27</td>
<td>18</td>
<td>39</td>
<td>23</td>
<td>310</td>
</tr>
</tbody>
</table>

### 3.5 Levels of Care in the Health System

In an effort to ensure equitable distribution of health services across Guyana, the Government of Guyana (GoG) reorganized the health sector according to 5 levels of care. The intent was to readily identify and address health issues in an efficient and effective manner. The 5 levels of care are:

- Level I – Health Post or Community Health Area
- Level II – Health Centre
- Level III – District Hospital
Level IV – Regional Hospital
Level V – National Referral Hospital

Level I – Health Post

For this level of care, health services are provided at health posts in communities or health areas by a Community Health Worker (CHW). The CHW is selected for training, for a duration of three months, by members of his/her community and are expected to function in their respective communities on successful completion of their training. They provide services to communities of up to 1,000 individuals and are supervised by a Medex.

The services provided by the CHW include:
1. Promotion of proper nutrition
2. Promotion of basic sanitation and safe water
3. Provision of basic maternal and child care including immunization
4. Health education and treatment of common diseases and injuries
5. Basic curative and rehabilitative services
6. Referral of complicated cases to other levels

Level II – Health Centre

Level II care is more complex than that at Level I and is provided by more qualified/trained staff which includes:

a. A Government Medical Officer (GMO) - Visiting
b. A Medex
c. A Health Visitor (HV)
d. A Midwife
e. A Nursing Assistant (NA)
f. An Environmental Health Officer (EHO)
g. A Dental Auxillary or visiting Dentist
The services provided at the health centre include:

a. In and outpatient services - inpatient services are primarily low risk obstetric deliveries and postnatal care for the infant and mother
b. Maternal and child care including family planning and immunization
c. Nutrition
d. Health promotion
e. Dental care
f. Environmental health services
g. Support and supervision of Level I services

Level III – District Hospital

District hospitals provide all of the services of a Level II care facility but also include the services of a permanent GMO. The services provided at Level III facilities include:

a. All the services provided at a Level II facility
b. Surgical services – operations such as appendectomy, herniorrhaphy, haemorrhoidectomy and the management of uncomplicated fractures
c. Maternal and Paediatric services, except for complicated cases
d. Gynaecology – deliveries, Caesarean sections, ectopic pregnancies, dilatation and curettage
e. Simple radiological and laboratory examinations
f. Preventative and curative dental services
g. Health promotion
h. Support and supervision of Levels I and II

Levels I, II and III care constitute Primary Health Care (PHC).

Level IV – Regional Hospital

The Regional hospital is staffed by medical personnel with postgraduate training and/or greater experience in specific fields than the GMO at Level III. Specialties include Internal Medicine,
Surgery, Obstetrics and Gynaecology, Paediatrics and Anaesthesiology. A wide range of laboratory, pathology and radiological services are provided as well as physiotherapy.

Level IV provides technical support to the lower levels and refers cases to Level V.

**Level V**

This is provided only in Region 4 at the Georgetown Public Hospital Corporation. In addition to providing Level IV types of service for the population of Region 4, there are specialties in Orthopaedics, Ophthalmology, Ear, Nose and Throat (ENT), Neonatology and Radiotherapy.

### 3.6 Strategic Planning

For the period under review, the MoPH has developed several National Strategic Health Plans as well as disease specific strategic plans. In 1970, there was the NHP 1970-1980 which was aligned with the goals in the PAHO/WHO Ten Year Health Plan for the Americas. This was followed by the NHP 1995-2000 which was in keeping with the global goal of Health for All by 2000.

The global trust of Health for All by 2000 started in 1977, when the World Health Assembly decided that the main social target of governments and of WHO should be the attainment by all the people of the world by the year 2000 of a level of health that would permit them to lead a socially and economically productive life. The aim was that all people in all countries should have at least a level of health that they are capable of working productively and of participating actively in the social life of the community in which they live. As a result of this goal, existing health services were reoriented to a health system based on primary health care, taking into account the role of the individual, the family, the community and local nongovernmental organizations, as well as health personnel.

The National Development Strategy 2001-2010, which contained a section on health policy, NHP 2003-2007, NHP 2008-2012 and finally Health Vision 2020 (Table 6) were in accordance
with the Millennium Development Goals (MDGs) [Appendix 7]. The MDGs were introduced in September 2000 after World Leaders adopted the UN Millennium Declaration committing to a new global partnership to reduce extreme poverty, setting out time bound targets with the deadline of 2015 for achievement. The MDGs also addressed hunger, disease, lack of adequate shelter and exclusion while promoting gender equality, education and environmental sustainability.

Guyana met the target of eliminating gender disparity in primary and secondary education; child health, reducing the under-5 mortality rate by two thirds from 120 per 1,000 live births in 1991 to 17 per 1000 live births in 2008; combating HIV/AIDS, malaria and other diseases and environmental sustainability.

The Health Vision (HV) 2020 was developed in 2013 and is aligned with the Sustainable Development Goals (SDGs) [Appendix 8]. It has as its vision that all Guyanese be among the healthiest in the Caribbean by the year 2020. Its mission is to create an enabling framework where there is full participation, provision of leadership, integrated delivery of quality, effective and responsive health services and prevention measures, resulting in improved physical, mental and social well-being of all the people.

Strategic goals of HV 2020 are:

- Advanced well-being of all the people of Guyana
- Reduced Health inequities
- Improved Management and provision of evidence-based, people-responsive, quality health services

Pillars of HV 2020:

1. Universal Health Coverage
   - ‘All people receive the health services they need without suffering financial hardship’.
   - Conceptualized as a direction and not a destination since its dimensions – people, services and finances are constantly changing.
• Strategically enables the attainment of multiple desired results
  – increased financial risk protection
  – improved access to health services
  – improved health outcomes.
• Promotes a renewed focused on Primary Health Care (PHC) as the principal overarching approach to public health care provision in Guyana.

2. Addressing Social and other Determinants of Health
• Mobilize and re-orient resources (including financial, material, human resources, social and political capital) to address the needs of the most vulnerable populations, in particular those in rural and interior locations
• Collaborating with communities, civil society, private sector agents and other stakeholders (plan-implement-monitor-evaluate-plan cycle)
• Improved health literacy, knowledge, decision-making and outcomes.
• Inter-sectoral actions to build coalition of support for improved public health within and outside of the health sector.

Most of the major diseases and health issues in Guyana have had national strategies developed to outline the approaches to address these conditions and issues. Beginning with the National AIDS Programme Strategic Plan 1999-2001, these have progressed through the years to current strategies which run up to 2020 (Table 6).
Table 6: National and Disease Specific Strategic Plans of the Ministry of Public Health

<table>
<thead>
<tr>
<th>Area</th>
<th>Time bound Strategic plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall health</td>
<td>National Health Plan 1970-1980</td>
</tr>
<tr>
<td></td>
<td>National Health Plan 1995-2000</td>
</tr>
<tr>
<td></td>
<td>National Development Strategy 2001-2010 (contains a section on Health Policy)</td>
</tr>
<tr>
<td></td>
<td>National Health Plan 2003-2007</td>
</tr>
<tr>
<td></td>
<td>National Health Plan 2008-2012</td>
</tr>
<tr>
<td></td>
<td>Health Vision 2020</td>
</tr>
<tr>
<td></td>
<td>National Strategic Plan for HIV/AIDS 2002-2006</td>
</tr>
<tr>
<td></td>
<td>Guyana National HIV Strategic Plan 2013-2020 (HIVision 2020)</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>National TB Strategic Plan 2008-2012</td>
</tr>
<tr>
<td></td>
<td>National TB Strategic Plan 2013-2020</td>
</tr>
<tr>
<td>Malaria</td>
<td>National Malaria Control Programme Strategic Plan 2013-2017</td>
</tr>
<tr>
<td></td>
<td>National Malaria Control Programme Strategic Plan 2015-2020</td>
</tr>
<tr>
<td>Mental Health</td>
<td>National Mental Health Plan 2005-2015</td>
</tr>
<tr>
<td></td>
<td>National Mental Health Strategy 2015 – 2020</td>
</tr>
<tr>
<td></td>
<td>National Suicide Prevention and Control Plan 2015 - 2020</td>
</tr>
<tr>
<td>Non-communicable Diseases</td>
<td>Guyana Strategic Plan for the Integrated Prevention and Control of Non-communicable Diseases and their Risk Factors 2013-2020</td>
</tr>
<tr>
<td>Maternal and Child Health</td>
<td>National Strategic Plan for the Reduction of Maternal and Neonatal Mortality in Guyana 2006 - 2010</td>
</tr>
<tr>
<td></td>
<td>Sexual and Reproductive Health Strategic Plan (Draft) 2015</td>
</tr>
<tr>
<td></td>
<td>Guyana MDG Acceleration Framework – Improve Maternal Health 2014</td>
</tr>
</tbody>
</table>

The MoPH has been successful in developing these strategic plans and implementation plans have been developed for some of the strategic plans. In some instances, the absence of an implementation plan for a specific programme has contributed to difficulty in having very precise and detailed planning of activities, the measurement of outcomes and has affected the ability to accurately make projections on the true costs for implementation.
CHAPTER 4: EPIDEMIOLOGICAL PROFILE

4.1 Disease Surveillance

The Public Health Ordinance of 1934 gives the MoPH authority to carry out surveillance of various infectious diseases. Disease surveillance was performed through the entry of information on specific diseases in various note books and registers, preceding and in the early post-independence periods. In the 1970’s and 1980’s, the surveillance system was revised to report on new threats, Acute Diarrhoeal Diseases (ADD) and Sexually Transmitted Diseases (STDs) Syndromes.

In 1993, the MoH established its Epidemiology Unit and in the 1990’s, vertical surveillance systems were established for Malaria, Tuberculosis (TB), Human Immunodeficiency Virus (HIV) infection and Zoonotic infections.

Beginning in 2005, the MoH implemented a mixed syndromic and disease specific surveillance system which tracked both communicable and non-communicable diseases (NCDs). The communicable diseases syndromic surveillance system comprised the Daily Syndromic (S1) and Weekly Syndromic (S2) forms which track acute syndromes such as diarrhoea and vomiting, febrile syndromes such as fever with rash, fever with jaundice, fever with haemorrhagic symptoms (Appendix 3).

The S1 forms are filled on a daily basis at all health facilities and a weekly summary is prepared on the S2 forms, which are then entered into databases at the national level. In addition to the S1 and 2 forms, there is a monthly Communicable Diseases form (S4) which tracks laboratory confirmed diseases recorded in the S1 and 2 forms.

The NCDs tracking is done using the monthly chronic non-communicable diseases form (S3) on which a monthly tally is made of the new and recurring cases of the various NCDs seen at a particular health facility.
Data from the first level of the health care system (level I) is sent to the next level and to the Regional Health Officer (RHO), who is then responsible for sending this information to the Statistical Unit of the MoPH. At each level of the health system, the data is expected to be analyzed. However, little analysis of data is conducted at the regional level. Analysis and reporting conducted at the national level are sometimes delayed in dissemination and, on some occasions, have resulted in late detection of outbreaks.

4.2 Disease Profiles

1966 – 1975

Little data have been obtained about the disease profile of the country in the early days of its history. A sense of the prevailing major health issues was obtained from the Guyana National Archives and interviews, which revealed that from the time of independence and into the 1970’s; the major health issues were infectious diseases, especially Malaria, Dengue, Yellow Fever, Leishmaniasis (Yaws), Hansen’s Disease (Leprosy), Tuberculosis and other respiratory tract infections; Acute Diarrhoeal Diseases (ADD), Vaccine Preventable Diseases especially Measles and Malnutrition.

1976 – 1985

The focus on health for this period included high risk populations; children, youth, women and the elderly as reflected in the report on Health Conditions in the Americas with particular reference to Guyana. Health issues included infectious diseases, especially Malaria which was caused by *P. falciparum* spreading in epidemic proportions throughout the western part of the country. Although coastal areas had been practically free of Malaria since the 1950s, the exacerbation of the disease in the interior and increasing population movements between the two areas have resulted in the detection of locally imported malaria cases along the coast. Bancroftian filariasis was also a serious public health problem during this period, especially in the capital city, where the main vector responsible for its transmission, *Culex quinquefasciatus*, was present in high densities.
Other diseases included Dengue, Tuberculosis and other respiratory tract infections, Acute Diarrhoeal Diseases (ADD), Vaccine Preventable Diseases especially Measles and Malnutrition. Leprosy was also of concern with 719 cases in 1980, a rate of 81.3 per 100,000 population, which was ranked the sixth highest rate in the Caribbean. Guyana also reported 159 cases of Diabetes Mellitus, with the highest number recorded being in the 45 years old age group.

1986-present

The disease pattern of the previous period continued to a large extent, except that Malnutrition and Vaccine Preventable Diseases were significantly reduced and the Acquired Immune Deficiency Syndrome (AIDS) became a major challenge in the 1990’s. Additionally, Chronic Non-Communicable Diseases (CNCDs) such as Diabetes Mellitus, Hypertension and Cancers started to be recognized as emerging major health issues.

Non-communicable diseases (NCDs) have been associated with the greatest mortality in Guyana since 1996. In fact, apart from HIV/AIDS and Acute Respiratory Infections, they have occupied the top 9 places (Figure 12). Among the NCDs, cerebro-vascular disease (CVD) and ischaemic heart disease (IHD) have been consistently among the top 2 causes of morbidity and mortality, while neoplasms, HIV/AIDS and Diabetes Mellitus have interchanged for third, fourth and fifth places respectively over time. HIV/AIDS was a greater cause of mortality than the other 2 in the latter part of the 1990’s and the early 2000s, but was replaced by neoplasms from around 2006 onwards (Figure 12).

It is interesting to note that suicide is a major cause of mortality in Guyana. The World Health Organization rated Guyana as having the highest rate of suicide in the Americas and in the world in 2012. Suicide is a leading cause of mortality among adolescents and young adults.
Figure 12: Major Causes of Mortality (1996-2012)

Source: Ministry of Public Health Databases and Statistical Bulletins

NB: Interrupted lines indicate that condition was not in the top 10 causes for that particular year
4.3 Diseases of Major Concern in Guyana

4.3.1 Malaria

With its tropical climate, high rainfall and marshy conditions, Malaria has consistently posed a threat to the Guyanese population. The National Malaria Eradication Programme (NMEP) commenced in 1959, eliminating the disease from the coastal regions at that time. From thousands of reported cases at the beginning of the NMEP, only 72 cases were reported in 1974 (Guyana concept note to Global Fund to Fight AIDS, Tuberculosis and Malaria, 2015). As a result of the successful eradication efforts, which resulted in reduced morbidity and mortality from malaria, there was a concomitant reduction in resource allocation to malaria and this contributed to resurgence in cases (Guyana concept note to GFATM, 2015).

In 1991, there were 41,000 cases reported, and this number of cases increased to a little more than 84,000 reported cases in 1995. Thereafter, annual cases were consistently around 30,000 up to 2004. Between 2007 and 2009, reported case were at their lowest, and thereafter, cases once again started to increase annually above 15,000 (Figure 13).

PAHO/WHO conducted a rapid assessment of malaria reporting in August 2015, and established that there was a 44% of underreporting of cases nationally in 2014 and 42% in 2013 (Guyana concept note to the GFATM, 2015)
Malaria transmission has always been tied to movement of persons from the coast travelling to the hinterland regions (1, 7, 8, and 9) to engage in economic activity associated with the extractive industries of gold, diamond and lumber. Whenever there is an increase in the price of gold on the world market, there is a concomitant increase in the number of malaria cases as a greater number of coast landers travel to the malaria endemic regions for the purpose of mining and a greater number of the population is exposed to malaria (Figure 14).
Figure 14: Correlation between Malaria Cases and Gold Prices

While the majority of cases occur among coast landers, there is indigenous transmission of Malaria in the endemic regions. This indigenous transmission is most noticeable in children under 19 years of age and elderly persons 60 years and older and Guyana’s Amerindian population is most affected (Figures 15 and 16). These persons represent people who are most likely to be permanent residents of those communities.

Source: Guyana Concept Note for Malaria April 2015 to the Global Fund
Each community in the Malaria endemic regions has at least a Health Post staffed by a CHW who is trained in malaria microscopy. At the level of a health centre, district or regional hospital, trained microscopists are also on staff to take and read smears for malaria parasites. Hence, for most permanent residents of these areas, Malaria is usually diagnosed and treated relatively early. However, for itinerant miners and loggers, due to the difficult terrain in the Malaria
endemic regions, diagnosis and treatment are usually delayed as most of the persons suffering from Malaria usually have to access treatment outside of the areas in which they were infected.

After the eradication of Malaria along the coast in the early 1970’s, Guyana continuously received international donor assistance to fight Malaria. Initiatives such as the Roll Back Malaria, Amazon Network for the Surveillance of Antimalarial Drug Resistance (RAVREDA) and more recently, the Global Fund to Fight AIDS, Tuberculosis and Malaria have provided technical and financial support. Donor support has also been obtained to provide logistical support to traverse difficult terrain to provide services to miners and loggers at severe risk of infection.

Currently, the National Malaria Programme is engaged in the following interventions for the reduction of Malaria: strengthening of Malaria case management through training to improve Malaria detection (microscopy and rapid testing) and treatment, active case detection through partnerships with civil society, vector control through distribution of Long Lasting Insecticide Treated Bed Nets (LLIN) and control of mosquito breeding sites through spraying with insecticides.

4.3.2 Tuberculosis

Guyana’s response to Tuberculosis (TB) commenced in the 1920’s with the establishment of the Best Sanitorium, where patients with TB especially from the hinterland communities were housed. Initially, TB infection resulted in high mortality, but with the introduction of anti-tuberculous drugs in the 1950’s and by the time of independence in 1966, the incidence was estimated at 35/100,000 population and by the late 1970’s the incidence was below 16/100,000 (National Strategy for TB control 2015-2020).

Conditions that fostered the spread of TB and Leprosy in Georgetown prior to independence and in the early post-independence period were the presence of various “yards” such as the Portuguese yard in areas such as Carmichael Street. It is believed that these yards housed tenements which were overcrowded with persons from the lower socio-economic strata of
society (Appendix 9). After independence, the dissolution of these yards and relocation of persons in less overcrowded conditions assisted in the reduction in the prevalence of both conditions.

By the early 1980’s, around 120 TB cases were being reported annually (Figure 17). Tuberculosis was no longer deemed a major national public health threat and key activities and interventions that aided reduction were not sustained. The Best Sanitorium was converted into the West Demerara Regional Hospital (WDRH) in Region 3. A small unit for treatment of TB patients remained at the WDRH, which was eventually closed in 1992 (National Strategy for TB Control 2015-2020). Prior to the closure of this unit, other chest clinics that were operating in Linden and New Amsterdam were also closed and only the Chest Clinic in Georgetown offered services to TB patients across the country.

Due to a decline in economic conditions in Guyana in the 1980s and the advent of the HIV/AIDS epidemic in the early 1990’s, TB remerged as a major public health threat. From around 1993, the number of new cases detected annually progressively increased, reaching a peak of 712 cases after which there was a steady decline until 2015 (Figure 17).

**Figure 17: Annual Distribution of New Cases of Diagnosed TB (1980-2015)**

Source: Ministry of Health Database
In 1994, a new National TB Programme (NTBP) was formally launched, with the implementation of the World Health Organization (WHO) Directly Observed Treatment Short Course (DOTS) as one of the main strategies to combat TB. DOTS was piloted in 1995 and with support from the Canadian International Agency for Development (CIDA), the NTBP focused on the high burden areas and populations severely affected by HIV.

In 2001, a National TB Action Plan titled “Stop TB at its Source” focused on DOTS implementation and capacity building to deliver TB services at PHC level was launched and the implementation of DOTS commenced in 2002 in Georgetown. DOTS’ implementation was expanded to the Georgetown Prison the following year. With commitment from the MoH and donor support, initially from CIDA, DOTS was expanded to 3 regions by 2006 and to all 10 regions by the following year. Expansion of DOTS was supported with funding from the GFATM and the United States Centers for Disease Control and Prevention.

Regarding surveillance, the initiation of DOTS in the prison contributed to an increase in case detection at the national level. Following an initial upsurge in TB cases detected in the prison, population, annual cases fluctuated during the period 2002-2009 and peaked to a little more than 40 in 2010 (Figure 18).
Currently, the National TB programme has increased the number of TB sites to 22 that have the capacity to microscopically diagnose TB and 18 of these sites provide treatment. Additionally, the National Public Health Reference Laboratory (NPHRL) has the capacity to conduct drug sensitivity testing and is also able to detect resistant strains through the use of Gene X-pert testing.

4.3.3 Human Immuno-deficiency Virus

In the initial stages of the epidemic, AIDS was a reportable condition. Guyana recorded its first case of AIDS in 1987. Since then, AIDS cases have progressively increased, reaching a peak of 435 in 2001. Thereafter, there was a decrease in trend until 2015 (Figure 19).
When WHO made HIV infection a reportable condition, Guyana concurred with the need to report HIV infection. Up to 1997, Guyana reported on AIDS cases diagnosed mainly in the public health sector. From the beginning of the HIV/AIDS epidemic in Guyana until 2008 when CD4 testing became routinely available, the National AIDS Programme (NAP) used the CAREC clinical criteria to diagnose AIDS cases. These criteria included the identification of any AIDS indicator disease (all of which required laboratory testing that were not available in Guyana) or the presence of two clinical AIDS defining conditions such as unexplained weight loss of more than 10% of body weight and diarrhoea for more than a month, plus a positive HIV test.

When CD4 testing became routinely available, a CD4 count equal to or less than 200 cells per mm$^3$ was used to diagnose AIDS. This changed to a count equal to or less than 350 cells per mm$^3$ in 2010. Since CD4 testing was not consistently available initially, there may have been underreporting of AIDS cases in some years.

When the country started to report on all persons infected with HIV, there was an increase in reported data. Unlike AIDS cases which peaked in 2001, HIV infections (combination of HIV and AIDS) peaked 5 years later in 2006 with 1,614 cases. An examination of the data before and after the peak of the epidemic in 2006, demonstrated that the average annual number of cases
(1,036) did not vary in the five years before and after the peak (Figure 20). A similar analysis covering 10 years prior to and after the peak of the epidemic, showed an average annual increase in cases in the later 10 years of the epidemic (from 818 to 966).

**Figure 20: HIV and AIDS Cases Combined (1989-2015)**

![HIV and AIDS Cases Combined (1989-2015)](image)

Source: Ministry of Health Database

A comparison of the annual trends in the number of AIDS/advanced HIV infection versus the number of persons with only HIV infection showed a significant widening of the gap between the two (2). Initially, AIDS cases or advanced HIV infections were outstripping HIV infections, up to 2000 (Figure 21). After 2000, the divergence commenced. The treatment programme commenced in 2003 and real uptake of treatment commenced around 2005.
In the early stage of the HIV/AIDS epidemic in Guyana, males were predominantly more affected than females with ratios as high as 4:1. From the late 1990’s, females started to be infected at a higher rate than their male counterparts and by 2004 HIV and AIDS cases were equally distributed in both sexes (Figures 22 and 23).
Figure 23: Percentage Distribution of HIV and AIDS Cases by Sex (1989-2015)

The greater majority of persons with HIV/AIDS from 1999 - 2006 fell within the age range of 25 - 49 years of age with most cases within a single age group occurring in persons 35 - 39 years of age (Figure 24).

Figure 24: HIV/AIDS by Age Group (1999-2006)
At the time that the first case of AIDS was reported in Guyana, the country was classified as a Highly Indebted Poor Country (HIPC) by the World Bank (WB) and there were little resources to combat the epidemic. However, through the support of the Global Programme on AIDS (GPA) and financial and technical assistance from the Caribbean Epidemiology Centre (CAREC), the country established the National AIDS Programme Secretariat in 1989, and subsequently the Genito-Urinary Medicine (GUM) Clinic for voluntary counseling and testing (VCT), the National Laboratory for Infectious Diseases (NLID) and the National Blood Transfusion Service (NBTS).

In 1992, the National AIDS Committee (NAC) was established to provide policy guidance and advocacy and the establishment of Regional AIDS Committees (RAC) in the 10 regions of the country. The NAC was also responsible for advising the Minister and promoting networking with Non-Governmental Organizations (NGOs).

In 2005, through the advocacy of the United Nations (UN) Theme Group on HIV/AIDS, and in order to fulfill a requirement of the WB grant, the country established the Presidential Commission on HIV/AIDS (PCHA), whose role was to coordinate the multisectoral response.

### 4.3.4 Prevention of Mother to Child Transmission (PMTCT) of HIV Programme

The PMTCT programme started as a pilot at 7 health facilities in Regions 4 and 6 in 2001. This programme provides HIV counselling and testing of pregnant women in the antenatal period, during labour and delivery at public and private health care facilities in all 10 Regions of the country. Counselling and testing are also offered to male partners of the women. Women who are infected with HIV are given Antiretrovirals (ARVs) as treatment during labour and delivery. ARVs are also given to their newborn as early as possible after birth, preferably within 48 hours. Babies born to HIV infected women in the PMTCT programme are also tested for HIV through DNA PCR technique within the first 6 months and by ELISA at 18 months.

By the end of 2014, there were 188 points of care (ANC, labour and delivery) providing this service to pregnant women, indicating that the PMTCT programme is one of the health
programmes where there is widespread access to all segments of the population, including persons in the hinterland communities. Figure 25 shows the PMTCT uptake of this service, which has progressively increased with the participation of almost all pregnant women.

**Figure 25: Uptake of PMTCT Services by Pregnant Women (2002-2014)**

Source: MoH PMTCT Annual Reports 2007-2014

From 2002, PMTCT programmatic data on the prevalence of HIV among pregnant women revealed that the prevalence was 3.5%. After which, there was a consistent reduction up to 2009, after which there was an increase to 1.9% in 2013 and 2014 (Figure 26).
Concomitant with the reduction in HIV prevalence among antenatal women in the PMTCT programme, there was a reduction in the proportion of babies born to the HIV infected mothers who also tested positive for HIV (Figure 27).

Source: MoH PMTCT Annual Reports 2007-2014

Source: MoH PMTCT Annual Reports 2008-2014
Treatment is one of the areas that the NAP has had good success. Of persons who have enrolled into the care and treatment programme, the proportion that had actually commenced treatment with anti-retroviral medications had increased from around 70% in 2009 to 85% in 2014 (Figures 28 and 29). The estimated numbers of persons living with HIV who require treatment and are actually receiving it are unknown. It is believed that treatment with ARVs would have increased survival of persons with AIDS/Advanced HIV infection and contributed to the reduction in mortality due to AIDS and advanced HIV infection.

**Figure 28: Patients Enrolled in HIV Care and Treatment and on ART (2009-2014)**

![Graph showing the number of patients enrolled and on ART from 2009 to 2014.](source.png)

**Figure 29: Proportion of Patients Enrolled in HIV Care on ART (2009-2014)**

![Graph showing the percentage of patients on treatment from 2009 to 2014.](source.png)
4.4 Neglected Tropical Diseases (NTDs)

4.4.1 Hansen Disease (Leprosy)

Hansen Disease (Leprosy) was a major public health issue in Guyana in the 1980’s, but with effective case detection and treatment, the disease was brought under control. At one time, cases were isolated at the Leprashram in Mahaica, Region 4, which is still in existence with a few cases that have been cured but with no family to accept them.

In the period 1997 to 1998, annual cases of Leprosy were close to 24 in number. After that period, there were fluctuations in the number of cases with a peak in 1999 of approximately 45 cases. In 2003, Leprosy peaked again with 50 cases and the lowest number of cases (16) was recorded in 2012. After 2012, the trend included an increase in the number of cases reaching a high of 29 cases in 2015 (Figure 30).

Figure 30: Annual Cases of Leprosy (1997-2015)

![Graph showing annual cases of Leprosy from 1997 to 2015](image)

Source: Hansen’s Disease Clinic Patient Register

The increase in cases was most noticeable among patients with Multi-Bacillary (MB) Leprosy compared to those with Pauci-Bacillary (PB) Leprosy, whereby cases of MB occurred 3 times more frequently than cases of PB (Figures 31 and 32). New cases have been reported in Regions 2, 3, 4, 6 and 10 at all of the 14 clinics monitored by the Hansen Disease Control Programme.
Figure 31: Annual Distribution of Multi-Bacillary (MB) and Pauci-Bacillary (PB) Cases of Leprosy (1997-2015)

Source: Hansen’s Disease Clinic Patient Register

Figure 32: Annual Percentage Distribution of Multi-bacillary (MB) and Pauci-Bacillary Cases of Leprosy (1997-2015)

Source: Hansen’s Disease Clinic Patient Register

More cases of both MB and PB have been diagnosed in males than in females (Figures 33 and 34). Males with MB Leprosy comprise close to 40% of all recorded cases.
Figure 33: Types of Leprosy by Sex (1997-2015)

Source: Hansen’s Disease Clinic Patient Register

Figure 34: Percentage Distribution of Types of Leprosy Cases by Sex (1997-2015)

Source: Hansen’s Disease Clinic Patient Register
4.4.2 Lymphatic Filariasis

Lymphatic Filariasis (LF) was first identified in Guyana in 1877 as reported in the Plan of Action for Neglected Tropical Diseases (POA NTDs). Routine data on this infection was not consistently available in Guyana and as a result a number of hospital-based and community surveys were conducted in an attempt to define the burden of the disease in the country (Nathan and Stroom 1990, Rawlins et al 2000, PAHO/WHO 2000). A standardized methodology to map the geographical distribution of LF was carried out in 2001 among 2,325 school-aged children between the ages of 6 to 16 years. This survey, using immune-chromatographic antigen card tests (ICT), found all of the Regions of Guyana except Region 1 to be endemic for lymphatic filariasis. Variability regarding level of endemicity, varying from partially endemic to endemic was found (Table 7).

In 2001, Guyana commenced national efforts to interrupt and reduce the transmission of LF through the widespread use of cooking salt fortified with diethylcarbamazine citrate (DEC). The DEC-fortified salt was distributed in all 10 Regions of the country. There were some challenges with regards to logistics management (PAHO 2004).

Another attempt to interrupt transmission commenced in 2009 with the Mass Drug Administration (MDA) of Albendazole and DEC. Five (5) rounds were completed in Region 5 and three (3) rounds in Region 4 with support from international donors and plans for expansion included Regions 3 and 10.
### Table 7: Classification of Regions Regarding Endemicity of Lymphatic Filariasis

<table>
<thead>
<tr>
<th>Region and Area</th>
<th>Endemic status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region I</td>
<td>Non-endemic</td>
<td>Prevalence of infection &lt;1%</td>
</tr>
<tr>
<td>Region II</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region III</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region IV (Georgetown)</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region IV (rural)</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region V</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region VI</td>
<td>Endemic</td>
<td></td>
</tr>
<tr>
<td>Region VII</td>
<td>Partially endemic</td>
<td>LF transmitted in isolated foci only</td>
</tr>
<tr>
<td>Region VIII</td>
<td>Partially endemic</td>
<td>LF transmitted in isolated foci only</td>
</tr>
<tr>
<td>Region IX</td>
<td>Partially endemic</td>
<td>LF transmitted in isolated foci only</td>
</tr>
<tr>
<td>Region X</td>
<td>Endemic</td>
<td></td>
</tr>
</tbody>
</table>

Source: Integrated Plan of Action for the Control and Elimination of Neglected Tropical Diseases

#### 4.4.3 Soil Transmitted Helminths (STH)

Soil Transmitted Helminths (STH) includes infections with *Ascaris lumbricoides*, *Trichuris tricuria* and the hookworms *Necator Americanus* and *Ancylostoma duodenale*. In Guyana, while data were not collected on each STH individually, data were collected under the broad grouping “worm infestation”, which is used as a proxy for Soil Transmitted Helminths (STH). Data were collected using the S4 form; however analysis is to be conducted.

Over the years there has been an increasing recognition of STH as a health issue since STH can lead to malnutrition and anaemia.
4.5 New and Emerging Infectious Diseases

Guyana has recently been faced with the threat of new and emerging infectious diseases. The three (3) most current of those diseases are Chikungunya, Ebola and Zika.

4.5.1 Chikungunya

Chikungunya was first detected in Guyana in May 2014, in East Berbice. With the *Aedes aegypti* mosquito being very prevalent on Guyana’s coastland, the infection quickly spread to Regions 5, 4, 3 and 10 in that order. Based on reports emanating from health facilities at both public and private health institutions, it was estimated that by the end of 2014, there were more than 5,000 suspected cases.

The MoPH’s response was to embark on vector control efforts, mainly through fogging and health promotion campaigns, encouraging the public to take measures to reduce the mosquito population and to seek symptomatic treatment at health facilities.

One of the major challenges the MoPH faced was the lack of reporting of suspected cases of Chikungunya from both the public and private sectors even though the Ministry had developed special surveillance forms to track the epidemic.

4.5.2 Zika

The first case of Zika was detected in Guyana in January 2016. The existing conditions that resulted in cases of Chikungunya are still prevalent and could result in the increase in the cases of Zika as the *Aedes aegypti* mosquito also transmits the Zika virus. With the experience of responding to Chikungunya, the MoPH is better prepared to respond to the effective control of transmission of this virus. Currently strategies include integrated vector management; surveillance strengthened to capture newborns of Zika infected pregnant mothers as well as ensuring that the health system is ready to respond to the cases of Zika.
4.6 International Health Regulation

After the independence of Guyana in 1966, the World Health Assembly approved the IHR in 1969 which covered 6 diseases. The IHR was subsequently reviewed in 1973 and 1981 when it was reduced to 3 diseases and smallpox was eradicated globally. Subsequently, the diseases were grouped into 5 classes. Guyana was guided initially by the IHR published by WHO which focused on the 5 classes of reporting referred only to infectious diseases.

The first class (highest risk) of the IHR referred to those diseases under surveillance by WHO which included Plague, Cholera, Yellow Fever and Smallpox. A second group with similar characteristics included Louse-borne Typhus Fever and Relapsing Fever, Poliomyelitis, Malaria and Viral Influenza. These diseases required obligatory reporting by the country. During those early years, more than 80% of the population was protected by the yellow fever vaccine and the country reported the last case in 1968.

Smallpox was also eliminated through immunization during the 1960s. In 1962, Poliomyelitis was also eliminated successfully and flaccid paralysis is still under active surveillance. In November 1992, the first case of cholera was detected in Region 1 and it was successfully eliminated. The last reported case of Measles was in 1991 and Guyana has continued active surveillance for this disease.

Malaria still is a challenge, mainly in rural areas and hinterland and is the subject of a special Intervention Project. Influenza has a seasonal variation and has influenced the country’s participation in the pandemics, especially the last one in 2009. Currently, influenza is an endemic - epidemic disease in the country affecting children and elderly together with chronic diseases, malnutrition and immunodeficiency. There is no clinical or epidemiological evidence of tick borne or louse borne rickettsioses.

For diseases in the second class, regular reporting was required wherever the disease occurred. This class contains the Immune-preventable diseases including Typhoid Fever, Brucellosis and Leprosy. Guyana, in an effort to reduce the incidence of these diseases, sought to control and
eliminate through the expanded programme of immunization during and after the 1970s. Leprosy and Brucellosis have been reduced to a low number of cases as a result of interventions in human and animal health (control of the food safety, water and sanitation and medical treatment, contact tracing and follow up), but these conditions still exist. Human Rabies was successfully eliminated and urban canine transmission stopped, but there are still cases of Bovine infestation and transmission in bats and vampires, which are the natural reservoir.

In class 3, the reporting requirements were selective for endemic areas. This class includes some neglected diseases and in Guyana, these are Lymphatic Filariasis (LF), Leishmaniasis and Soil Transmitted Helminthes (STH) which still exist in the country.

Class 4 required the reporting of epidemics which continue to occur to date utilizing the current surveillance system e.g. gastroenteritis and food poisoning outbreaks.

The last class 5 was related to sporadic disease, minor diseases or those without an epidemic potential by a low level of transmission or none and are a choice of the country. An example of a disease in this class is the common cold.

After 2003, WHO started a complex process of revision of the IHR, through consultation and negotiation with state partners and other organizations. The revisions to the IHR were guided by country and global data regarding increases in trends of emerging and re-emerging infectious diseases, threats of chemical and radionuclide origin, different products for human and animal use, and the growth of international trade and travel. As part of the revisions, a different surveillance, alert and response system had to be prepared to address these problems. Guyana was affected by all of the problems highlighted above and had to be prepared to address the Severe Acute Respiratory syndrome (SARS), the first global public health emergency of the twenty first century.

The purpose and scope of the new IHR 2005 produced a high impact in the country and changed the way of thinking of many of the Public Health workers, called attention and influenced the participation of many stakeholders, institutions and Ministries to meet the needs in this area. The
objective of the IHR 2005 is “to prevent, protect against, control and provide a public health response to the international (and national) spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.”

Guyana signed the IHR after it was released by WHO and developed a National Action Plan which is updated periodically. One important reason to consider the IHR implementation in a country as a first priority for the Government is because any threat to human, animal or environment health, in the international arena can evolve into a conflict in Guyana and any epidemic or public health problem of national or international concern in the country can be scaled up to a “National Security problem”, if it is not prevented, detected or controlled in time.

Some changes were important for Guyana after the implementation of IHR 2005. With reference to diseases in classes 1 and 2, Human Influenza caused by a new subtype and SARS are still potentially epidemic for Guyana. It should be highlighted that in Guyana only Dengue and other vector-borne diseases such as Chikungunya and Zika exist and are in epidemic proportions.

The IHR plan has greatly assisted the country in its response. A National IHR Inter Sectorial Committee was established which facilitates quarterly analyses of the health situation in Guyana and abroad, prepares the human resources in key sectors for early detection, alerts and develops the response to any threat to the country and is responsible for implementing and monitoring the core public health capacities. This committee was able to effectively implement the above functions when the flood of 2005 and the influenza pandemic in 2009 occurred.

As part of the implementation of the IHR Plan, training in surveillance and Infection Prevention and Control (IPC) with International Advisors and National Facilitators was done in different levels of the Health System (doctors, nurses, medex and other Public Health personnel in public and private services), including SARI Surveillance and Lab techniques to detect the principal biological agents at National Public Health Reference Laboratory (NPHRL) and GPHC. Rapid Response mechanisms and Infection Prevention and Control (IPC) were established and are functioning at national and hospital levels. A Simulation Exercise was done to test the plan and
deal with an H5N1 Influenza outbreak. Public Health Emergency Preparedness and Response and priority public health risks and resources were mapped and utilized. Mechanisms for effective risk communication during the emergency were established and functioning. A National Campaign was developed using the Media and different sources and actors.

Regarding laboratory diagnostic and confirmation capacity, the new NPHRL was constructed and equipped with a P-III level laboratory and was upgraded to test different respiratory viruses and bacteria together with the systematic collection and analyses of samples. The samples that cannot be tested by this laboratory are sent to CARPHA and CDC with feedback to MoPH.

In 2014, the Ministry of Agriculture (MoA) commissioned a new Veterinary Laboratory Services and the services provided are continually being enhanced through international and national training and implementation of new techniques, working in collaboration with NPHRL and GPHC for any PHEIC.

The general obligations at Ports of Entry (PoE) are being fulfilled through the proper definition of international ports and strengthening of capacities for effective surveillance and response. Port Officers from different sectors were trained annually. During the Ebola epidemic in 2014-15, PoEs prepared full isolation areas to contain any potential epidemic in this level (international airports and ground crossings); a subcommittee was created to facilitate the Inter-institutional activities regarding PoE.

The Emergency Animal Disease Preparedness Plan for Guyana was reviewed and updated in 2011 for zoonotic events and have been harmonized with the PANAFTOSA Manual for Food and Mouth Disease (FMD). Field and desktop exercises have been developed during the last years to practice and test the national capacities to respond to animal diseases and zoonosis. Guyana has been free of FMD during the last years without vaccination and has had a Field Exercise with International Evaluators in April 2016 to receive from OIA the certification that is required for trade and exports. To reinforce the integrated approach to prevent and control zoonosis and risks related to the environment, the Caribbean Countries in partnership with key stakeholders, including UWI, PAHO\WHO and MoA and MoPH are developing the “One
Health, One Caribbean, One Love Project” which promotes an intersectoral approach to human, animal and environmental health.

The capacity to detect and respond to food safety events is the responsibility of the MoPH and Agriculture who have been increasing surveillance, inspections and control of different products related to any local or imported possible outbreak that can produce a PHEIC. The surveillance system for water and food have been updated during 2013-15 and should be upgraded during 2016 from level I to level II, with different indicators, event-based surveillance, risk-based inspection and sampling systems for public and private services to the population and for exports.

In the case of chemical and radionuclide risks, the MoPH requested a 2 years extension in 2014 for advancing in the preparedness of the country, recognizing that adequate preparation to address these two risks required specialized training. The MoA Pesticides and Toxics Chemical Control Board (PTCCB) works with different sectors and in collaboration with the Environmental Protection Agency (EPA) and MoPH, have developed the National Assessments and Action Plans based on international requirements. During 2015-16, with PAHO\WHO support the country has increased coordination and actions for Chemical Safety, risks and Emergency Response.

The country does not have a high level risk for Radionuclide events and has not had any emergency events. In 2015, the country requested and received inclusion in the International Organization of Atomic Energy (IOAE). An Intersectoral Technical Committee on Safe Handling and Transport of Radioactive materials in Guyana has been created and guided by EPA. In collaboration with the Ministry of Natural Resources an Ad Hoc Group is working with the IHR National Committee and MoPH to increase the capacity and training to deal with possible emergencies according to the IOAE Guidelines.
4.7 Environmental Health and Disasters

4.7.1 Water Safety

Since 1977, water supply has been high with a distribution of 97 % in urban and 96 % in rural areas. Although the quality of water at the source was generally acceptable, water intended for human consumption was bacteriologically poor. Contamination occurred in the distribution system because approximately 169 of the 171 existing systems had no treatment.

The National Environmental Policy (1990) was the only related legislation approved by the Cabinet. The responsibility for water supply was transferred from The Georgetown Sewerage and Water Commission (GSWC) and The Guyana Water Authority (rural and hinterland areas), which used treated and untreated groundwater wells, with high iron content, to the Guyana Water Incorporated (GWI) in 2002. Some progress was made regarding implementation of institutional and regulatory water and sanitation reforms. The WHO\UNICEF Joint Monitoring Programme estimated that by 2002, 83% of Guyanese would have access to improved drinking water and 70% to improved sanitation, but significant inequities still exist.

Following the transfer of responsibility for water safety and sanitation to the GWI, the MoPH and the EPA signed a MoU to jointly develop water quality standards. The GWI was required to supply safe drinking water in accordance with WHO standards. With PAHO/WHO support, the MoH planned to implement a region-by-region Water Safety Plan (WSP) in Guyana.

In 2005, after the effects of the flood, Guyana started applying WSP in close collaboration with the M&CCs, NDCs, GWI, MoLG, MoH and PAHO/WHO. This occurred in Georgetown, New Amsterdam, Linden, Lethem and more recently, Port Kaituma in 2009. Simultaneously, the MoPH, EPA, and GWI started monitoring the water quality. During 2010-11, the PAHO/WHO CO developed the first phase of a project for upgrading surveillance in the field with DelAgua Test Kits. The second phase of this project was implemented during 2013-14 in 5 regions and the final phase of implementation commenced in 2015 and implementation is ongoing.
Within recent years, the GWI has increased its distribution through the use of 23 water treatment plants and 130 wells to residents on the coast land. More than 200 projects help to distribute water to hinterland communities.

4.7.2 Sewerage and Solid Waste Management

In 1977, the percentage of the population that was served with sewerage systems (waste waters) in urban areas was 43% and 0% in the rural areas. The use of septic tank had increased in the cities and towns as a solution for waste water treatment and latrines are used mainly in rural areas and communities. In a report from 1993-1996, the country's housing situation exacerbated the development of squatters' settlements that has resulted in the use of polluted water for human consumption.

Sanitation coverage throughout the country was estimated at 90%, with 18% of the population having access to flush systems and 80% using pit latrines. Industrial and hospital wastes were not properly disposed. An old sewerage system served the central part of the city. Sewage was untreated and was discharged into the Demerara River. The Town Council and NDCs are responsible for management of sanitation activities in urban, rural and hinterland areas.

Based on the 2002 census, the percentage of households without toilet facilities was 2% and two-thirds of all households, continued to use pit latrines. The MICS 2014 showed that 87% of household members were using an improved sanitation facility which was not shared. In 2015, PAHO/WHO started promoting Safety and Sanitation Plans as a complement of the WSP that should be applied to the country.

Health Care Facilities waste management has been a biosecurity, occupational health priority and a potential pollution to the environment. Human resource capacity building has been conducted systematically to allow for adaptation to new technologies. During 2014, a national consultation was conducted as part of the process for the development of a MoPH Action Plan 2015-2025. The objective of the Action Plan is to stratify and improve the coverage and quality of waste management in the Regions, utilizing the facilities at Regional Hospitals for final treatment.
In Georgetown, an initiative for recycling at Haas Bosh Land Field Site was developed through a partnership with the IDB, MoC and PAHO/WHO during the last 4 years. This partnership established a successful waste recycling association and a cooperative organized by recyclers.

4.7.3 Food Safety

The Food and Drug Act was approved in 1971 and the Regulations in 1977. The MoPH continues to have a leading role in the control, licensing, inspection and sampling of products from import and export. The MoPH is also responsible for distribution, monitoring and reinforcement. The GAFDD works in close collaboration with Environmental Health and Veterinary Public Health Inspectors from the MoA Inspectors, who have the responsibility to protect and educate consumers, producers, distributors and importers.

During the 1980’s some projects aimed at improving the conditions of the Abattoirs in Lethem, Georgetown and some of regions were conducted. Additionally, the conditions for the slaughtering of animals at the abattoirs have been declining and are critical, especially in Georgetown.

During the 1990’s, the MoPH inspected premises, examined labels and packaging and analyzed food to ensure adherence to safety and quality requirements. GAFDD has been participating in the Inter-American Network of Food Analysis Laboratories and began testing the proficiency of laboratories. The Veterinary Public Health (VPH) Unit of the MoPH is still responsible for the inspection and monitoring of premises where fresh and frozen red meat, poultry and seafood are processed or sold.

The Guyana National Bureau of Standards is the Secretariat for the National Codex Committee of the Codex Alimentarius Commission, launched in 1999. During 1990-1995, chemical contamination of food occurred due to the lack of control mechanisms.
In 2002, the Environmental Health Department, within the MoPH, was responsible for ensuring that proper standards were maintained by the food protection and control services at the regional level. During 2003-2005, the number of safety and quality inspections increased. The VPH Unit coordinated a FAO project on the strengthening of the food control system in Guyana in which, MoA served as the implementing agency and the MoPH as project coordinator. From October 2005 to 2009, the MoPH and the MoA have been involved in monitoring of the spread of Avian Influenza from animals to humans.

During the last five years, GAFDD, the Environmental Health Unit and the Regions, the Veterinary Public Health Unit and the MoA/GLDA continue to monitor the production of foods, imports, exports and different small and medium-scaled businesses in the country. In 2010, the system of food safety certification was implemented. During 2012-14 PAHO/WHO supported the strengthening of the national food safety programme, food safety norms and guidelines, development of manuals, training of stakeholders and facilitated the country's participation in the Codex Alimentarius. The GAFDD also organized and conducted a national workshop on Nutritional Food Labeling. The Food Safety National Committee conducts a monthly analysis of the country situation and makes recommendations for the strengthening of surveillance systems which are to be upgraded during 2016.

4.7.4 Climate Change

Interventions to reduce environmental pollution and Climate Change (CC) impacts, while reducing deforestation and forest degradation have been successful in Guyana. The country’s contribution to this process has been recognized internationally in the last 20 years. The main sources of pollution in Guyana have been through the use of toxic chemicals used by the country's agricultural and mining sectors which have affected soil, food and water sources, rivers, fish, and residents of hinterland communities in both mining and adjacent non-mining areas.
The MoPH has been collaborating with the Pesticides Toxic Chemical Control Board, the EPA and the GGMC to strengthen the use of Legislations, International Agreements, Guidelines and National Action Plans for prevention and control of biological and chemical pollution.

### 4.7.5 Occupational Health and Safety

Occupational Health and Safety (OSH) is headed by the MoSP working in collaboration with the MoPH and other sectors. These programmes focus mainly on workplace safety. Apart from safety inspections, programmes provide curative rather than preventive care. In 2004, the total number of accidents reported was 2,202, including 2,198 non-fatal accidents caused by the extensive use of chemicals in agriculture.

Inadequate procedures for waste disposal, including chemicals, represented another risk factor to the health of Guyanese workers. Informal recycling that takes place at the landfill site in Georgetown poses high risk for workers. Gold mining communities, located in the interior are growing rapidly, with a lack of basic sanitary facilities created more OSH threats.

### 4.8 Maternal and Child Health

Maternal and Child Health (MCH) are two of the benchmarks that are used to determine the strength of health services being delivered by a country. In Guyana, MCH services were established in the 1970’s and this formed the basis of the Primary Health Care (PHC) services which deliver care to women and children. As a result, many of the health indicators are geared towards MCH.

MCH services are fairly well utilized in Guyana by pregnant women, their infants and their children Under 5 years. In 1966, the annual live births was 24,348, in 1980, it was 23,000 and decreased to 14,520 in 1990 (Figure 35).
In 1984, the percentage of pregnant women attending antenatal clinic was 42% which later increased to 92% in 2014 (HIA 1984; MoH, PHC 2014). Numbers of initial ANC visits were at their highest in 2009. From around the 1990’s, there were fluctuations in the number of births ranging from 14,000 to 15,000 in 2010 (Figure 36).

Figure 35: Annual Live Births (1966 -1990)

Source: Health in the Americas (1965-2000)

Figure 36: Primary Health Care Utilization (2003-2010)

Source: Ministry of Health Database

![Figure 35: Annual Live Births (1966 -1990)](image1)

![Figure 36: Primary Health Care Utilization (2003-2010)](image2)
The Maternal and Child Health data have demonstrated that trends regarding ANC attendance, post natal and infant visits have increased.

Guyana introduced its EPI programme in 1976 (HIA 1976-1985). In the early 1980’s, vaccination coverage was less than 70% for all antigens, but by 1989-1990, coverage averaged 80% and later increased to 90% for antigens under 1 year. This high coverage was maintained throughout until 2015, except for instances when a vaccine was newly introduced (Figure 37). Many of these conditions such as poliomyelitis, measles and rubella have been eradicated as a result of a very strong Expanded Programme on Immunization (EPI), which is a main focus of MCH services.

**Figure 37: Vaccination Coverage by Type of Vaccine (1980-2015)**

Source: Health Conditions in the Americas 1976-1985 and Ministry of Health Database

**NB:** Beginning of interrupted lines represent introduction of that specific vaccine

As a result of the strong MCH services, improvement in the nutritional status of children under 5 years of age is reflected at a high of 21% in 1995, mild to moderate malnutrition then declined to a low in 2010 and from 2011 to 2015 this plateaued to approximately 2% by 2015 (Figure 38).
Another contributory factor to improvement in the nutritional status of children Under 5 years was the promotion and uptake of breast feeding by lactating women. From 1999, more than 40% of the women who delivered live infants had exclusively breast fed their babies, while after 2001, the numbers of mothers who fully breastfed increased to more than 50% as compared to mothers who partially breastfed their babies (Figure 39).
Notwithstanding the gains in MCH attendance and vaccination coverage, there are some challenges with the MCH programme. The perinatal morality, in 1977, was at a high of 177 per 100,000 and was the leading causes of death in children Under 1 year. In 1984, anaemia in pregnancy was 69% in women who had Hemoglobin levels less than 11 grams per dl. In 1984, of all the live births, 19.5% had low birth rate. Prenatal visits were only 42 % with an average of 6.6 visits per person.

During 1984 to 1985, approximately 10% of all births were handled by domiciliary midwife services. The prematurity rates in 1986 and 1987 were 4.7% and 3.3%, respectively, which was higher than it was during 1984 - 1985. The stillbirth rate in 1984 was 11.8 per 1,000 live births, over the next two years; it decreased to 10.2 and 7.2 in 1985 and 1986 respectively. In 1987, it was reported to increase to 10.8 per 1,000 live births.

In 1985, approximately 51% of all known births in Guyana were delivered at Georgetown Hospital. During 1984 to 1987, normal deliveries accounted for 91.4% of all births and 6.0% were by cesarean section. The prematurity rate was about 5% of live births. Stillbirth rate was reported as 20 per 1,000 births. Neonatal mortality peaked at 31.1 deaths per 1,000 live births in 1986.

The analyses of the Maternal Mortality Ratio (MMR) during the period 1990-2012 has demonstrated an overall decline with 320 per 10,000 in the 1990’s to an all-time low of 80 per 100,000 in 2008 and to 112 per 100,000 in 2012 (Figure 40).
Figure 40: Maternal Mortality Ratio (1990-2012)


According to the MDG Accelerated Framework for Maternal Health, although the trend was decreasing, there have been fluctuations. Efforts are needed to leverage the necessary resources to reduce the fluctuations and accelerate the decreasing trend in the MMR. Pregnancy Induced Hypertension and Pre-eclampsia (PET) still remain the leading causes of death in Guyana. Efforts are being made to ensure that there is adequate specialist staff at all ten Regional Hospitals and conduct training in emergency obstetric care for doctors and midwives in a further effort to reduce the number of deaths from 24 to less than 10 annually.

Infant mortality according to national data has decreased from 60 per 1000 live births in 1963 to a low of 10.8 live births per 1000 in 2009 which increased to 23.3 per 1000 live births at the end of 2014 (Figure 41). The increase in the Under 1 year IMR at the end of 2014 was related to an increase in neonatal infections and control measures were implemented to address this problem.
Overall, Under 5 mortality rate has decreased significantly from 53 per 1,000 live births in 1990 to 14.3 per 1,000 live births in 2009 and was reported to be 23.9 per 1000 at the end of 2014 (Figure 42).
4.9 Sexual and Reproductive Health

Births in Guyana increased annually from around 13,700 in 1991 to a high of 19,300 in 1997 and thereafter there was a consistent decline in the number of births to just around 15,000 in 2011 (Figure 43). During this 20 year period, between 19.7% and 23.7% of these births occurred in teenagers 15 and 19 years of age (Figure 44). This is a cause for concern as teenage pregnancies are at increased risk for complications.

Figure 43: Live Births (1988-2011)

![Live Births Graph](source: Health Conditions in the Americas 1985-2002 and Ministry of Health Database)

Figure 44: Live Births by Age Group of Mothers (2007-2011)

![Age Group Graph](source: Ministry of Health Database)
Abortion became legal in Guyana in 1995 with the Act stipulating the maturity of pregnancy (gestational weeks) whereby abortion would be allowed and also who could perform them (TOP Act). After the Act was passed, according to the data reviewed, approximately 2,268 abortions were reported. However, during the period 1997 to 2007, there were reductions in the number of cases reported. In 2005, 212 cases were reported to the MoPH (Figure 45).

**Figure 45: Number of Pregnancies Terminated Annually by Age Group (1996-2012)**

![Figure 45](image)

Source: Ministry of Public Health Database

Rates of termination of pregnancy among teenagers were relatively high, and in the other age groups, the numbers peaked in 2007, but declined annually since then (Figure 45).

In the post-independence period until 2005, procurement of contraceptives was done outside of the Ministry of Health, by the Guyana Responsible Parenthood Association (GRPA), an Affiliate of International Planned Parenthood Federation. Even though contraceptives were procured by GRPA, the provision of Family Planning Services was done by the health posts, health centres and other private clinics. When an analysis of the reported use of contraceptives by women was conducted, it was observed that new acceptors remained relatively constant at 10,000 from 2011 to 2014 (Figure 46).
With there being some 192,957 women of childbearing age (15-49) in Guyana in 2002 (Table 2), it meant that annually, only about a fifth of them had used contraceptives. Further analyses of the usage of contraceptives by age group showed that in teenagers, use is very low.

**Figure 46: Contraceptive Usage by Women (2010-2014)**

![Figure 46: Contraceptive Usage by Women (2010-2014)](image)

Source: Ministry of Public Health Database

Additionally, more than 20% of terminated pregnancies between 1991 and 1998 occurred in teenagers (Figure 47). This can account for the reported low usages of contraceptives in persons below the age of 20 years.

**Figure 47: Proportion of Pregnancies Terminated by Age Group (1991-1998)**

![Figure 47: Proportion of Pregnancies Terminated by Age Group (1991-1998)](image)

Source: Ministry of Public Health Database
An analysis of the types of contraceptive used was conducted and it was observed that the injectable contraceptives had the highest usage during the period 2010 to 2014. However, the use of condoms was low, with less than 10,000 women reporting the use of condoms as a form of contraception (Figure 48).

**Figure 48: Contraceptive Usage by Type (2010-2014)**

Source: Ministry of Public Health Database

### 4.10 Non-communicable Diseases

Non-communicable diseases have been a major issue in Guyana. Cerebrovascular diseases, Ischaemic Heart disease and pulmonary circulation complications were the major causes of death among individuals 60 years and over during the period 1970-1986. According to Health in the Americas 1976-1986, the leading cause of death in persons 60 years and over was cerebrovascular disease. In 1979, 13.4 % of the deaths were caused by pulmonary circulation complications, 11.9 % Congestive Heart Disease and 6.1 % by Ischaemic Heart Disease. Other causes of death during this time were Diabetes Mellitus.

By 1988, these diseases as well as accidents and injuries were causes of death not only to individuals 60 years and over, but had started to affect persons between the ages of 45 and 60 years of age and remained the leading causes of death between 1990 and 1996 (Table 8)
### Table 8: Ten Leading Causes of Death (1990 and 1996)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cerebrovascular diseases</td>
<td>Cerebrovascular diseases (11.6 %)</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>Ischemic heart disease (9.9 %)</td>
</tr>
<tr>
<td>Diseases of pulmonary circulation</td>
<td>Immunity disorders (7.1 %)</td>
</tr>
<tr>
<td>Diseases of other parts of the digestive system</td>
<td>Other diseases of the respiratory system (6.8 %)</td>
</tr>
<tr>
<td>Endocrine and metabolic disease, immunity disorders</td>
<td>Diseases of pulmonary and other forms of heart disease (6.6 %)</td>
</tr>
<tr>
<td>Other diseases of the respiratory system</td>
<td>Endocrine and metabolic diseases (5.5 %)</td>
</tr>
<tr>
<td>Hypertensive disease</td>
<td>Diseases of other parts of the digestive system (5.2 %)</td>
</tr>
<tr>
<td>Certain conditions originating in the perinatal period</td>
<td>Other violence (5.1 %)</td>
</tr>
<tr>
<td>Intestinal infection diseases</td>
<td>Certain conditions originating in the perinatal period (4.3%)</td>
</tr>
<tr>
<td>Undetermined injury</td>
<td>Hypertensive diseases (3.9 %)</td>
</tr>
</tbody>
</table>

Sources: Ministry of Health 2000; Pan American Health Organization (PAHO) 2003

These top causes of death outlined in the table above were responsible for two-thirds of total deaths in 1996. Three of these causes, all chronic non-communicable diseases, appeared among the leading causes for both years. For both years, the two top causes of mortality in Guyana were Cerebro-vascular Disease, and Ischemic Heart Disease.

Since 2000, disaggregated data were collected on the various disease conditions. Apart from disaggregation by age group and sex, the data were disaggregated by level of health institutions i.e. at community health services level or at hospital outpatient level. This methodology provided information on the NCDs situation at the level of the communities, urban and surrounding areas where hospitals were located in addition to service level utilization by the population.

From this data, Accidents and injuries were also major health issues based on the data presented (Table 8). For all 3 of the conditions highlighted, females were more affected than males. Community level data were similar to hospital data and provided information regarding access and service utilization at the community level.
NCDs were consistently ranked among the top 5 leading causes of mortality in Guyana except for the period when HIV/AIDS was ranked 2nd in 2002 and 5th in 2007. As a result of NCDs continuing to be the leading cause of mortality, the GoG at the 2007 CARICOM Heads of Government meeting in Port of Spain acceded to the Port-of-Spain Declaration. Later, the United Nations (UN) convened special high level meetings in 2011 and 2014 respectively to address NCDs as a global health issue.

In 2013, the Strategic Plan 2013-2020: Integrated Prevention and Control of Non Communicable Diseases in Guyana was developed and a Presidential Commission on NCDs was also established in 2014. A draft Implementation Plan for the NCDs Strategy with budgetary allocations was developed and guiding current programme implementation. As part of the implementation of the Operational Plan, the National Tobacco Legislation was finalized and will be tabled in 2016.

Based on a Cost Analysis of Diabetes and Hypertension in Guyana which was conducted in 2013-2014, there is a high economic costs to the nation to treat patients with these conditions. The annual estimated cost to the government for managing diabetes and hypertension at the outpatient level is US$17,018,039 and US$17,845,467 (MoPH & PAHO/WHO 2014).
Table 9: Distribution of Non-communicable Diseases by Patient Visits, Age and Gender - Community Health Services (2000)

<table>
<thead>
<tr>
<th>DISEASE</th>
<th>TOTAL</th>
<th>AGEPGROUPS IN YEARS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;1</td>
</tr>
<tr>
<td></td>
<td>S EX</td>
<td>R N</td>
</tr>
<tr>
<td>Ill-defined causes</td>
<td>M 798</td>
<td>20,713</td>
</tr>
<tr>
<td></td>
<td>F 1,168</td>
<td>8,687</td>
</tr>
<tr>
<td>Hypertension</td>
<td>M 3,053</td>
<td>2,300</td>
</tr>
<tr>
<td></td>
<td>F 6,854</td>
<td>4,642</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>M 1,683</td>
<td>1,088</td>
</tr>
<tr>
<td></td>
<td>F 4,014</td>
<td>2,168</td>
</tr>
<tr>
<td>Arthritis</td>
<td>M 817</td>
<td>1,543</td>
</tr>
<tr>
<td>Rheumatism</td>
<td>F 1,457</td>
<td>2,417</td>
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<tr>
<td>Skin Disorders</td>
<td>M 634</td>
<td>4,533</td>
</tr>
<tr>
<td></td>
<td>F 315</td>
<td>3,207</td>
</tr>
<tr>
<td>Accident &amp; Injuries</td>
<td>M 313</td>
<td>3,051</td>
</tr>
<tr>
<td></td>
<td>F 298</td>
<td>2,738</td>
</tr>
<tr>
<td>Mental and Behavioural</td>
<td>M 155</td>
<td>462</td>
</tr>
<tr>
<td>Disorders</td>
<td>F 286</td>
<td>834</td>
</tr>
</tbody>
</table>

Source: Ministry of Public Health Database

R = REPEAT visits

N = NEW visits (First visit associated with health problem for that year)
Table 10: Distribution of Non-communicable Disease by Patient Visits, Age and Gender – Hospital Out-patient Visits (2000)

<table>
<thead>
<tr>
<th>SEX</th>
<th>S</th>
<th>E</th>
<th>X</th>
<th>R</th>
<th>N</th>
<th>R</th>
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<tr>
<td></td>
<td>TOTAL VISITS</td>
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<td>M</td>
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<td>10,849</td>
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<td>Hypertension</td>
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<td>N.A.</td>
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<td>Arthritis Rheumatism</td>
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<td>Skin Disorders</td>
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<td></td>
</tr>
<tr>
<td>M</td>
<td>529</td>
<td>1,461</td>
<td>N.A.</td>
<td>332</td>
<td>N.A.</td>
<td>780</td>
<td>N.A.</td>
<td>794</td>
<td>N.A.</td>
<td>449</td>
<td>N.A.</td>
<td>1,155</td>
<td>N.A.</td>
<td>420</td>
<td>N.A.</td>
<td>231</td>
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</tr>
<tr>
<td>F</td>
<td>509</td>
<td>1,442</td>
<td>N.A.</td>
<td>316</td>
<td>N.A.</td>
<td>787</td>
<td>N.A.</td>
<td>880</td>
<td>N.A.</td>
<td>596</td>
<td>N.A.</td>
<td>1,532</td>
<td>N.A.</td>
<td>384</td>
<td>N.A.</td>
<td>243</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accident &amp; Injuries</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>470</td>
<td>3,540</td>
<td>N.A.</td>
<td>39</td>
<td>N.A.</td>
<td>348</td>
<td>N.A.</td>
<td>670</td>
<td>N.A.</td>
<td>503</td>
<td>N.A.</td>
<td>1,179</td>
<td>N.A.</td>
<td>565</td>
<td>N.A.</td>
<td>234</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mental and Behavioural Disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>139</td>
<td>129</td>
<td>N.A.</td>
<td>1</td>
<td>N.A.</td>
<td>1</td>
<td>N.A.</td>
<td>4</td>
<td>N.A.</td>
<td>20</td>
<td>N.A.</td>
<td>50</td>
<td>N.A.</td>
<td>23</td>
<td>N.A.</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>134</td>
<td>182</td>
<td>N.A.</td>
<td>1</td>
<td>N.A.</td>
<td>0</td>
<td>N.A.</td>
<td>2</td>
<td>N.A.</td>
<td>11</td>
<td>N.A.</td>
<td>86</td>
<td>N.A.</td>
<td>60</td>
<td>N.A.</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Public Health Database

R = REPEAT visits

N = NEW visits  (First visit associated with health problem for that year)
In reviewing data from 2011 – 2014, the pattern of NCDs was similar to that of 2000, where Hypertensive diseases, ill-defined conditions, diabetes and musculo-skeletal disorders were ranked among the top 5 causes of morbidity and mortality (Figure 49).

**Figure 49: Selected Non-communicable Diseases (2011-2014)**

Source: Ministry of Public Health Database
4.10.1 Cancers

Disaggregated data on cancers were recorded as early as 1995, where 37 cases were reported. In 1996 and 1997, reported neoplasms cases were 64 and 125 respectively (Appendices 4 and 5). No other records of cancer data were found apart from the comprehensive database of the Guyana Cancer Registry, which contained data from 2000-2013.

According to the profile of Cancers in Guyana 2003-2012, the Guyana Cancer Registry was established in May 2000. Data were collected from all public and private institutions and therefore is the most comprehensive repository of cancer data in Guyana. From 2000-2012, 8,153 cancers were recorded in the registry’s database. According to this report, 6,518 cancers were recorded for a cumulative incidence of 867.7 which translates into an average annual incidence of 86.7 per 100,000 populations. There were progressive annual increases in the numbers of cancers which peaked in 2007 after which there were fluctuating reductions and increases in cases (Figure 50).

Figure 50: Annual Incidence of Cancers (2003-2012)
Females were affected 1.54 times more than males, with 3,956 and 2,561 cancers respectively. Approximately a fifth of all cancers were found in persons aged 75 years and older. The second most affected age group was persons aged 15-39 years with 597 (11%) of cancers. 2% of all recorded cancers were found in the paediatric age group (age less than 15 years) [Table 11].

**Table 11: Age Distribution of Cancers (2003 – 2012)**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of cases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15</td>
<td>129</td>
<td>2.0</td>
</tr>
<tr>
<td>15-39</td>
<td>751</td>
<td>11.5</td>
</tr>
<tr>
<td>40-44</td>
<td>458</td>
<td>7.0</td>
</tr>
<tr>
<td>45-49</td>
<td>570</td>
<td>8.7</td>
</tr>
<tr>
<td>50-54</td>
<td>698</td>
<td>10.7</td>
</tr>
<tr>
<td>55-59</td>
<td>712</td>
<td>10.9</td>
</tr>
<tr>
<td>60-64</td>
<td>645</td>
<td>9.9</td>
</tr>
<tr>
<td>65-69</td>
<td>655</td>
<td>10.0</td>
</tr>
<tr>
<td>70-74</td>
<td>632</td>
<td>9.7</td>
</tr>
<tr>
<td>75+</td>
<td>1268</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6518</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: A Profile of Cancers in Guyana (2003-2012)

Afro-Guyanese had the highest absolute numbers of cancers (2,892, 44.4%) followed by Indo-Guyanese with 2,505 (37.9%) and Guyanese of Mixed race with 510 (7.8%) of cases (Table 11). Guyanese of Chinese descent had the highest cumulative and average annual incidence rates (1,289.4 and 128.9 per 100,000 population) followed by Afro-Guyanese (1,273.7 and 127.4 per 100,000 population) and Indo-Guyanese (767.8 and 76.8 per 100,000 population) (Table 12 and Figure 51). Afro-Guyanese males had the greatest number and rates of prostate cancers followed by Indo-Guyanese males.
Table 12: Cancers by Ethnicity (2003 – 2012)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Cumulative incidence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>African</td>
<td>2892</td>
<td>44.4</td>
<td>1273.7</td>
</tr>
<tr>
<td>Amerindian</td>
<td>241</td>
<td>3.7</td>
<td>350.9</td>
</tr>
<tr>
<td>Chinese</td>
<td>18</td>
<td>.3</td>
<td>1289.4</td>
</tr>
<tr>
<td>Indian</td>
<td>2505</td>
<td>38.4</td>
<td>767.8</td>
</tr>
<tr>
<td>Mixed</td>
<td>510</td>
<td>7.8</td>
<td>405.6</td>
</tr>
<tr>
<td>Not Stated</td>
<td>344</td>
<td>5.3</td>
<td>-</td>
</tr>
<tr>
<td>Portuguese</td>
<td>6</td>
<td>.1</td>
<td>400.8</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>.0</td>
<td>419.3</td>
</tr>
<tr>
<td>Total</td>
<td>6518</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: A Profile of Cancers in Guyana (2003-2012)

Breast cancer was the leading cancer over the period, accounting for almost 17% of all cancers and 27% of cancers in females. There were 1,074 cases of breast cancers among females and 16 among men. Slightly more Indo-Guyanese were affected, with Indo-Guyanese women comprising 44.9% of cases, followed by Afro-Guyanese women with 42.3% (Table 13).
The second leading cancer was cancer of the cervix with 1,014 cases, an average annual incidence of 27 per 100,000 population. Afro-Guyanese women had marginally the highest number (384) followed by Indo-Guyanese women with 383 cancers. Guyanese women of Chinese descent had the highest average annual rate of cervical cancer (56.1 per 100,000), followed by Afro-Guyanese women with 33.9 per 100,000 and women of Mixed ethnicity with 15.1 per 100,000 population.

The third most common cancer overall and the leading one in men was cancer of the prostate gland (865 cases, an annual incidence of 11.5 per 100,000 population). Prostate cancer was found to be a disease of older age groups as only 4% of cases were in men below the age of 55 years. More than half (53%) of cases were found in men older than 75 years and 19% in men aged 70 – 74 years. Prostate cancer was more common among Afro-Guyanese males who had three times more cancers than the second most affected ethnic group who were Indo-Guyanese.

Two thirds (66%) of all cases occurred among Afro-Guyanese males and 19% in Indo-Guyanese. 52.4% of all persons with cancers had died with females having twice the mortality of males. Among females, cancer of the cervix had the highest sex specific mortality (105.5 per 100,000 population) and 22.2% of all deaths in females, and was closely followed by breast cancer with 104.2 per 100,000 population and 21.9% of all female deaths. Prostate cancer had the highest sex
specific mortality of all cancers with 163.8 per 100,000 population and 33% of all deaths in males.

4.10.2 Cancer Screening

No data has been found that demonstrated that Guyana has ever had a comprehensive cancer prevention, treatment and control programme inclusive of systematic and comprehensive screening. In the 1990’s some amount of screening of women attending gynaecological clinics with Pap smear was conducted, but was limited in scope and lacking promotion.

In 2009, Visual Inspection with Acetic Acid (VIA) screening of women attending antenatal clinics commenced. In addition to screening through staining of the cervix and surrounding vaginal vault with acetic acid, suspicious lesions were also treated with cryotherapy, while patients with gross lesions were referred for further evaluation and treatment. In all, some 19 VIA clinics were established and data on all persons accessing this service was compiled. Data from 2013-2015 has revealed that 7,572 women were screened at the GPHC clinic, with 7,544 having data entered. The vast majority of those screened were of Afro-Guyanese descent, followed by Indo-Guyanese (Figure 52).

**Figure 52: Visual Inspection with Acetic Acid Screening by Ethnicity (2013-2015)**

Source: Ministry of Public Health Database
There is no comprehensive cancer prevention, treatment and control programme in Guyana. With cancer consistently being the 3rd leading cause of mortality, the establishment of such a programme is an imperative. In that regard, in December 2015, PAHO supported the MoPH for the conduct of a situation analysis of cancer prevention, treatment and control as a prerequisite to the development of a National Cancer Plan. The next step is for the information gleaned from the consultancy to be utilized and the key stakeholders canvassed to develop this plan and proceed with the establishment of the comprehensive programme.

4.10.3 Suicide

Suicide has been a major health issue for Guyana as the general trend has been one of annual increases in the numbers of cases from 1998, except in 2000, 2004 and 2009 (Figure 53) and in rates per 100,000 population (Figure 54). In 2012, WHO ranked Guyana as having the highest rate of suicide in the world.

In its regional report on suicides in the Americas, PAHO had the global age adjusted rate for suicide at 11.4 per 100,000 population, while for Lower Middle Income Countries (LMIC) of the Americas the rate was 5.2. The age adjusted rate for Guyana was 16.04, which was 1.5 times that of the world and more than 3 times that for LMICs in the Americas. Further, the age unadjusted rate for Guyana was 23.44 per 100,000 population (34.69 in males and 7.71 in females) [PAHO 2014].

In the same PAHO report, it was reported that suicides in Guyana constituted 17.6%, 17.5% and 9.8% of deaths in the age groups 10-19, 20-24 and 25-44 respectively. This was second only to Trinidad and Tobago with rates of 23.8, 22.3 and 12.2 respectively among PAHO member states. When one looks at the rate of deaths due to external causes in those age groups, Guyana was again the second most affected country with 32.3, 29.0 and 30.8 respectively, which was second only to Suriname with 40.9, 37.5 and 36.3 respectively. In addition to the high rates of suicide, attempted suicide is also of major concern with even higher numbers.
Figure 53: Annual Cases of Suicide (1997-2015)

Source: Ministry of Public Health Database
NB: Data was not available for 2004 and 2005

Figure 54: Annual Suicide Rates (1997-2015)

Source: Ministry of Public Health Database
Chapter 5
Perspectives on the Achievements and Challenges over the Past 50 Years
CHAPTER 5: PERSPECTIVES ON THE ACHIEVEMENTS AND CHALLENGES OVER THE PAST 50 YEARS

The first 50 years of Guyana’s independence from Great Britain has undoubtedly seen much progress in health in spite of numerous challenges. The key informants were asked to speak about the achievements and challenges over the past 50 years. This chapter seeks to discuss the responses as well as to highlight some of the achievements and challenges.

5.1 Some of the Major Achievements

1. One of the hallmarks of achievements in the health system was the decentralization of healthcare services with improvement in access to services especially at the community level. Soon after independence, the government embarked on focusing on PHC, this was a priority after the Alma Ata Declaration of 1975. Emphasis was placed on building infrastructure such as health posts, health centres and district and rehabilitating regional hospitals.

2. In a response to the adequate amounts of skilled staff since many doctors, nurses and paramedical staff were migrating to other countries in the Caribbean, North America and Europe, the MoH embarked on creating numerous intermediary categories of healthcare workers. In addition, the MoH also conducted pertinent training programmes and curricula to build skills and competencies of these individuals. In conjunction with the focus on primary health care, there was also a strong concentration on building the capacity of allied health workers through the creation of new categories of workers to fill the gaps that were present due to the shortage of skilled professionals. Training programmes were developed to train the new categories of health care providers. The following are some of the training programmes and a brief synopsis of what they entailed:

   a. The Community Health Worker (CHW) Programme – persons from the hinterland communities would select a member or members from their community to be trained with the expectation that these individuals would return to their respective communities to serve. Their training focused mainly on the provision of PHC as
well as on proficiency in malaria microscopy and management of malaria patients according to standard protocols.

b. The Medex Programme – The word Medex was coined from “Medical Extension” Worker. Initially, these individuals were selected from persons who were experienced Staff Nurse Midwives and Pharmacists. They were trained to diagnose and treat specific clinical conditions and they functioned in locations where there were no Doctors. In essence, these were the equivalent to Physician Assistants.

c. The Dentex Programme – The Dentex is a healthcare provider who is similar to a Medex but instead works in the dental field. There were very specific dental conditions, which were regulated by law, and this law stipulates the conditions they could manage guided by clear protocols.

d. The Multi-Purpose Technician (MPT) Programme – persons were trained in two (2) laboratory and one pharmacy disciplines. These disciplines were radiology, laboratory technology and pharmacy. These MTPs could function as either one or in all three (3) disciplines.

e. The Physiotherapy and Rehabilitation Assistant Programme – in the absence of physiotherapists, these assistants were trained in physiotherapy and rehabilitation and could be placed in the periphery such as at health centres and district hospitals.

f. The Environmental Health Assistant (EHA) Programme – personnel were trained in environmental health issues such as sanitation, food hygiene, water quality etc. These staff were deployed in support of the Environmental Health Officers (EHO) and ensured larger geographical coverage regarding environmental health.

Healthcare providers from all of these training programmes met the needs of the population especially at the community level. The systems functioned to provide the minimum levels of service and persons requiring more specialized attention were usually referred to the next level where such services were available.
In addition to these training programmes, human resource issues were also addressed through the development of the medical programme at the University of Guyana (UG) where doctors are trained locally. The establishment of the Bachelors of Science degree in nursing at the UG and also the Bachelor’s Degree in Dentistry at UG were also other programmes introduced. Further, the UG and the GPHC in collaboration with a number of universities have developed specialist training programmes in certain disciplines such as infectious diseases, obstetrics and gynaecology, general surgery and orthopaedics.

Human resource shortages in specialized areas were also addressed through bilateral support from Cuba and China where specialists from these countries spent periods of time in Guyana providing specialized services.

The increase in the availability of personnel through the above mentioned local and international training programmes have resulted in more accessible services and greater coverage of the population, resulting in improved in health outcomes. The maternal mortality rate has decreased as a result of the Safe Motherhood Initiative and training programmes in Emergency Obstetric Care. The high rates of infant and Under 5 mortality from Acute Diarrhoeal Disease (ADD) and Acute Respiratory Infections were significantly reduced due to programmes such as Oral Rehydration Treatment and Integrated Management of Childhood Illnesses (IMCI). With a strong Expanded Programme on Immunization that included a high coverage for vaccine preventable diseases Guyana has received international recognition and polio, measles and rubella were eradicated in Guyana.

3. Another significant achievement highlighted was the reduction in malnutrition. Various factors contributed to this achievement including a reduction in ADD, the increased uptake of exclusive breastfeeding, improved nutrition through the basic nutrition programme and increase in the coverage and supply of safe water.

4. A further achievement included the reduction in the number of HIV cases which posed a major health threat from the mid 1990’s. AIDS was the third leading cause of mortality in the early 2000’s and by 2006; it was the sixth leading cause of death. This was a result of additional
resources from international donors, a multisectoral response, and concerted prevention, control and treatment efforts.

5.2 Challenges

1. Strategic planning, one of the core functions of the MoPH is the development of strategic plans which is evidenced by National Health Plans (NHP) as well as National Strategic Plans (NSP) for specific diseases. On many occasions, the development of these plans was driven by donor requirement to access funding. The NHPs and NSPs are documents that outline the broad strategies to assist the MoPH to achieve its goals. However, the operationalization of these strategies necessitate short (1-3 years), focused and target driven Operational Plans (OP) also called Implementation Plans. Where OPs were not developed, the annual budgets for the various departments of the Ministry were sometimes not aligned with the programme due to the lack of costed implementation plans.

While the focus of the Planning Unit in the MoPH has been on the budgeting aspect of programmes, hardly any monitoring and evaluation of programmes is conducted and little operational research to determine cost effectiveness or cost efficiencies of various initiatives and programmes.

2. Adequate and quality data management is critical prerequisites for planning. While the MoPH has data collection systems in place, detailed analyses are not always conducted at all the various levels across the system. Evidence-based and informed decision making will allow for improved programme planning, monitoring and evaluation and programme refinement.

There is a lack of human resources, skills and competencies in many programmes and especially at the regional levels, to analyze and interpret data. These result in information not often being utilized in real time, especially at the regional levels, to influence changes to programme implementation.
Information dissemination and use by the MoPH should be guided by a dissemination strategy. At each level of the health system where data are collected, analyzed, integrated and utilized, these data and information should be shared with central level for the development of national reports and evidence-informed decision making. Simultaneously, pertinent reports from central level and the regions should be shared with all data providers, stakeholders and programmes to improve implementation for the achievement of national targets and goals.

There is a need for an Integrated Health Information System. This system should have the requisite hardware and software, relevant human resources with the specific skills and competencies, supportive legislation and policies, public-private collaboration especially for data collection and appropriate financial and material support which will provide quality data and analyses.

3. Human Resources for Health is a challenge for MoPH in terms of having the requisite numbers of adequately trained and skilled staff and also the retention of skilled human resources e.g. doctors, nurses and other ancillary medical staff. Guyanese have been recruited by other countries from all of the disciplines that personnel have been trained. Numerous reasons have been given for this brain drain including difficult working conditions, inadequate remuneration and perceived lack of interest on the part of government about the welfare of workers.

From the early 1970’s, there has been a gap in terms of doctors (both general practitioners and specialists) and these shortages have been supplemented by bilateral agreements with the Cuban and Chinese governments to have their nationals strengthen Guyana’s health system. A Human Resource Strategy that includes the attraction, retention, capacity building and succession planning of human resources is critical but even more important, are the implementation and sustainability of this strategy.

4. As previously mentioned in this chapter, operational planning is a challenge for the MoPH. The lack of operational plans, would lead to some activities that may not respond to the strategic plan. In that regard, budgetary requests and allocations may not have been in sync with the true health needs of the population and the strategic plan. Additionally, this could also lead to a lack
of coordination of activities, and would impact negatively on the continuum of comprehensive care and influence unnecessary expenditure of financial resources.

5. From the early 1970’s, there were difficulties in the acquisition of adequate health commodities, including medicines. This persisted until the 1990’s, when through an IDB grant, an essential medicines list was developed and drugs and medical supplies were acquired through the International Dispensary Association (IDA). This ensured that essential medicines were procured at favourable prices. However, some challenges still remain, including logistic management and the distribution of these products to the periphery, which result in artificial shortages.

6. The establishment of a decentralized healthcare system in Guyana was done with the aim of reducing inequity in the distribution and accessibility of services. However, due to human resource shortages and the inefficient distribution of health commodities, many of the services were not available at the periphery. As citizens were unsuccessful in accessing these services, after a while they would bypass the facilities at the community level and proceed to the more central level. This created enormous pressure on the central levels resulting in overcrowding and long waiting times.

7. With PHC established as the foundation of the healthcare system, health promotion was therefore one of the lynchpins of the system. The Guyana Agency for Health Education and Food Policy (GAHEF) was established and was responsible for health promotion. However, this unit was disbanded in the early 2000’s and since then, there has not been a health promotion strategy or unit. Many of the prevailing health conditions, especially NCDs, are related to unhealthy lifestyle choices, and the lack of health promotion has challenged the MoPH’s ability to effectively address these conditions.
Chapter 6
PAHO/WHO Technical Cooperation (1966-2016)
CHAPTER 6: PAHO/WHO TECHNICAL COOPERATION (1966-2016)

PAHO/WHO’s involvement in Guyana has a long history, starting in 1951, when the Zone 1 office in Caracas, Venezuela, had the responsibility for technical cooperation with Caribbean territories. With the attainment of independence, Guyana, Trinidad and Tobago, Barbados and Jamaica sought to create separate country offices. PAHO/WHO’s Technical Cooperation (TC) was formalized in October 1967 with the establishment of the Guyana country office.

Our current TC with Guyana comprises five technical programmes: Communicable Diseases (CD); Non-communicable Diseases (NCD); Determinants of Health and Promoting Health throughout Life (DHPHL); Health Systems and Services (HSS); and Preparedness, Surveillance, and Response (PSR). Implementation of some of these programmes is supported by resources from PAHO/WHO specialized centres, including:

- Pan American Foot and Mouth Disease Center (PANAFTOSA)
- Latin American and Caribbean Center on Health Science Information (BIREME)
- Latin American Center for Perinatology, Women and Reproductive Health (CLAP)

Over the past 50 years, the ten (10) PAHO/WHO Representatives, international and local staff as well as consultants, delivered the technical cooperation programmes in Guyana with support from the Regional Office, PAHO/WHO Collaborating Centers and other agencies.

PAHO/WHO’s technical cooperation focused on supporting the process of ongoing health sector reform in Guyana and the implementation of a strategic agenda for the achievement of the health-related priorities. The public health sector has evolved and the model for health sector reform has shifted from centralization to that of decentralization and semi-autonomous bodies, with the Central Ministry of Public Health, focusing efforts on policy, planning, coordination, monitoring and evaluation and service delivery provided at the Regional level. This reform targeted issues such as equity, effectiveness, quality, efficiency, sustainable financing, inter-sector collaboration and community participation.
The main critical health sector development issues included:

- strengthening the public health leadership capacity;
- ensuring availability and access to information on the epidemiological situation and system performance;
- ameliorating the highly inequitable access to health care;
- improving efficiency;
- improving the managerial capacity of the sector in order to increase technical efficiency, i.e. productivity and quality;
- developing a human resource policy and plan for the sector to ensure optimal utilization of available manpower.

PAHO/WHO Guyana TC from 1967-2002, evolved around disease prevention and control with a strong emphasis on health promotion. After the actions generated by the promulgation of the Ottawa Charter 1986, the Caribbean Charter on Health Promotion was launched in 1993. Guyana implemented actions in different areas, including nutrition, health of the elderly, maternal and child health and mental health. Simultaneously, as a result of the sanitary situation of the country and its influence in different areas of the public health, PAHO/WHO focused it TC on Environmental Protection and Development. In addition, PAHO/WHO also focused on distribution and water quality, solid waste disposal, sewage and excreta management, occupational safety and health and health disaster preparedness.

Communicable Diseases’ prevention was a priority for the country. Malaria was almost eradicated in the 1960s but there was a resurgence of the disease in the 1980s mainly in the hinterland regions (1, 8 and 9). PAHO/WHO supported many interventions including rapid diagnosis and treatment, resistance to anti-malaria drugs, insecticide-treated bed nets, coordination of actions within the health services, resource mobilization and promotion of the Amazon Basin Initiative “Roll Back Malaria”.

Lymphatic Filariasis received support after the approval of a resolution by World Health Assembly (WHA) in 1997 and a National Action Plan was prepared and approved with the support of PAHO/WHO and other international partners for its elimination by 2020.
Before 1993, when TB was declared a re-emerging disease, PAHO\WHO supported the MoPH and contributed to the reorganization and improvement of the program with emphasis in surveillance, early diagnosis, laboratory development, DOTS and the integration of the program as a part of PHC. MoPH was also committed to the eradication of Leprosy with PAHO/WHO support.

During the late 1980s and early 1990s, STIs and HIV\AIDS emerged as an epidemic and support was provided by PAHO/WHO and UNAIDS for the development of the Strategic Plan 1999-2001. This contributed to improvement in surveillance, information system, establishment of the Voluntary Counseling and Testing (VCT) programme, a Commercial Sex Workers programme, prevention of PMTCT programme and training of professionals from many different sectors, including civil society and NGOs in disease prevention and control.

The success of the EPI in Guyana was recognized by PAHO/WHO and CAREC in 2001 for “maintaining good surveillance indicators” and the eradication and control of important Immuno-preventable diseases. The country has received support for purchasing vaccines through the PAHO/WHO revolving fund, training of staff, provision of international advisors and conducting research in some areas of the programme.

The NCD reached significant proportions and necessitated technical cooperation in the areas of Cancer, Hypertension, Diabetes and Tobacco control. A National Plan for the Management of Diabetes and a pilot programme was implemented. A Cancer Registry was developed and the country received support for the Global Youth Tobacco Survey and the Framework Convention for Tobacco Control.

Food Safety and Veterinary Public Health were also strengthened, through an inter-sectoral approach involving PAHO/WHO and the Pan American Foot and Mouth Disease Center (PANAFTOSA), Inter-American Institute for Cooperation on Agriculture (IICA), and Food and Agriculture Organization (FAO). The major influence in HSS strengthening has been the shift in focus from infectious to chronic NCDs. PAHO/WHO emphasized the importance of community and Family Health and the growing realization that health was “everybody’s business”.

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Contributions to the health sector included strengthening of the local health systems, laboratory facilities, provision of microcomputers for surveillance, reform of health legislation, development of health systems profile and health information system and capacity building through local and overseas trainings. An assessment of the Essential Public Health Functions was also conducted in this period.

PAHO/WHO has recognized that professional development of health care workers is critical to the functioning of the health sector and during the period 1991 to 2001, 40 fellowships were provided to counterpart employees. The CO also recognized that health is integral to the social and economic development of the country. Thus, in order to reach across the entire populace, dissemination of literature related to health was done through the Documentation Center.

During the period 2003-2015, the epidemiological profile of the country continued to transition from the predominance of communicable diseases to NCDs, however, some communicable diseases maintained prominence. Malaria was a major health problem and tuberculosis had doubled in incidence, reflecting the concomitant increase in HIV/AIDS. Originally, almost a third of all cases of tuberculosis were found in the Amerindian population, but there has been a shift to the general coastal population, with peak incidence in males aged 25-34 years, mirroring the HIV/AIDS epidemic.

Acute respiratory infections were the ninth leading cause of death overall and an important cause of death among children under age 14. Other infections such as Acute Diarrhoeal Diseases, Lymphatic Filariasis, Dengue, and Hansen’s disease were other communicable diseases impacted the health of the population in Guyana and caused significant morbidity. Non-communicable diseases and injuries were also key health issues impacting the health of the population.

In 2004, discussions started on the need to prepare a Country Cooperation Strategy for Guyana. In order to have the necessary background to determine the strategy, work began on updating the health systems profile, completion of the Evaluation of Public Health Functions and the health sector analysis. Based on the situation analysis and the challenges identified, the main strategic direction of PAHO/WHO’s work during the period 2004-2007 was aimed at:
• Reduction of excess mortality, morbidity and disability
• Promotion of healthy lifestyles and reducing risk factors
• Development of equitable health systems
• Policy and institutional development

The prime function of PAHO/WHO during this strategic period was to provide specific policy advice; serve as broker; and influence policy action and health spending. In order to fulfill these functions, the work plan of PAHO/WHO in Guyana for the Biennia 2004/5 and 2006/7 consisted of 6 projects, each with several planned activities. The projects comprised:

• Managerial process for national health development, which supported the functions of the Country Office itself, including National Health Development.

• Health Systems and Services Development. The primary foci of this area were: supporting the steering role of the Ministry of Health, development of health information systems, health service research, promoting the quality initiative, supporting the essential drugs program, mental health, and human resource development.

• Health in Human Development, which aimed to strengthen the information base and the use of information, promoting research and training staff in research methodology and data analysis and use.

• Health of Special Groups, focused on child and adolescent health and health of the elderly. Support was also provided for the promotion of the healthy settings initiative and food security and nutrition were addressed in this project.

• Environmental Protection & Development, focused on occupational safety and health, environmental protection and development, and disaster preparedness.

• Disease Prevention and Control, focused on prevention and management of communicable diseases, non-communicable diseases, expansion of the IMCI strategy to all regions, food safety, and veterinary public health.
The CCS 2010-2015 guided the development of work plans for the biennia 2010/11, 2012/13 and 2014/15. PAHO/WHO’s technical cooperation for this period focused on the following four strategic priorities:

- Strengthening health systems governance, organization and management based on primary health care approach
- Addressing the social and environmental determinants for improved health outcomes
- Reducing the burden of diseases
- Enhancing family and community health

Regarding the strengthening of health systems governance and management, the country office focused its technical cooperation on enhancing the stewardship and oversight functions of the Ministry, strengthening management capacity at national, subnational and local levels, increasing the capacity for planning, monitoring and evaluation, including the development of a harmonized national monitoring and evaluation framework; and strengthening of the essential public health functions.

In 2004, the country office also supported the conduct of an assessment of the essential public health functions. The main recommendation based on the findings was that more attention should be paid to the insertion of these functions into the health sector reform agenda. As a consequence, the priority areas identified for intervention and improved performance were included in the National Health Sector Strategy 2008-2012 and later the Health Vision 2020 which were both developed with support from PAHO/WHO. Focus was also placed on strengthening health workforce capacities by fostering partnerships with other sectors including the public service and through monitoring of the operations of the human resource unit.

PAHO/WHO technical cooperation for the strengthening of the health sector focused on strengthening the decentralized health service delivery network to foster integration and improved quality especially for vulnerable populations; support for the implementation and monitoring of the Package of Publicly Guaranteed Health Services (PPGHS); access to and use of appropriate technologies, medicines for the prevention and improvement of diseases; improved diagnosis and treatment and improved information systems. PAHO/WHO’s main
technical cooperation achievements included the development and finalization of the Health and Human Resources Action Plan 2011-2016 which was accepted by the MoH on May 2013. The process for the development of the PPGHS, first to third editions, was a major achievement. The implementation of PPGHS will facilitate Guyana’s movement towards universal health coverage.

The conduct of an assessment for Quality Management in Health Facilities such as GPHC, the National Psychiatric Hospital and the Skeldon District Hospitals were performed in 2012-2013. The development of a National Health Account and the conduct of a National Health Financing review which were also performed in 2013 were considered major achievements for this strategic function.

Regarding the social and environmental determinants for improved health outcomes, the focus of the PAHO/WHO’s technical cooperation was to advocate for poverty alleviation; improved access to services and the reduction of other social inequities; conduct risk assessments and support risk reduction measures; support the development and implementation of water safety plans; support the implementation of strategic plans for sanitation; improve health care facility waste management and support the implementation of food safety standards and the implementation of national occupational safety and health and disaster response programmes. The main achievements under this strategic function included the conduct of training and other capacity building activities in Mass Casualty Management (Sep 2013), development and implementation of a Mass Casualty Management Plan (Dec 2013), the conduct of country wide assessments of waste from health care facilities (Dec 2013) and the sustained implementation of the International Health Regulations.

PAHO/WHO’s strategic function aimed at reducing the burden of diseases focused on the reduction of both communicable and non-communicable diseases. In the area of communicable diseases, PAHO/WHO’s technical cooperation focused on supporting the development and implementation of a plan for the integrated management of vector-borne diseases, the scaling up of interventions for the elimination of Lymphatic Filariasis; assessing and addressing drug resistance for HIV/AIDS/STIs, TB and Malaria; support for the mapping and treatment of geohelminth infections in school-aged children; support for the implementation of Integrated
Management of Adult and Adolescent Illnesses (IMAI) and the general strengthening of the national TB programme.

Some of the main achievements under this strategic line of action included the mobilization of funds for national development through preparation of several proposals to the Global Fund for TB, Malaria and HIV/AIDS. As a part of PAHO-WHO’s technical cooperation, Malaria was tracked through the development of an information system through the Amazon Network for Monitoring Anti-malarial Drug Resistance (RAVREDA) project. Work was undertaken to strengthen surveillance of Malaria case management and evidence based decision-making in treatment guidelines.

PAHO/WHO supported the conduct of an evaluation of the existing TB programme in 2005 and the implementation of the DOTs programme. Through PAHO/WHO’s technical cooperation round 3 of the Mass Drug Administration for the elimination and interruption of Lymphatic Filariasis (LF) and Soil Transmitted Helminths (STH) in Regions 4 and 5 were completed as well as the finalization, printing and dissemination of guidelines for the control of Leprosy in Guyana.

The main focus of PAHO/WHO’s technical cooperation for the reduction of non-communicable diseases was on developing a strategic direction for NCDs prevention and control; supporting mechanisms for screening and reporting on cancers and other NCDs; the development of healthy public policies; promotion of healthy lifestyles to reduce risk factors related to NCDs; supporting the implementation of the WHO FCTC and supporting the development of a public health NCDs surveillance system.

Some of the main achievements included the development and implementation of a national NCDs strategy 2013-2020, the National Road Safety Strategy 2013-2020 and the National Mental Health Strategy 2015-2020; drafting of the National Tobacco Legislation and the development of voluntary standards for labeling and packaging of tobacco and advertising, promotion and sponsorship of tobacco; the development of the National Cancer Registry; protocols and guidelines to address Diabetes, Foot care and Hypertension; the conduct of a cost
analysis on Diabetes and sustained health promotion initiatives to address NCDs risk factors including unhealthy diets within communities.

Regarding the strategic function, enhancing family and community health, the focus of PAHO/WHO’s technical cooperation was on supporting the implementation of policies, strategies and interventions to improve maternal and new born health; strengthening national capacity to protect women and children from vaccine preventable diseases; supporting the implementation of the Expanded Programme of Immunization; the implementation of the child survival strategy and strengthening the national capacity to address adolescent health.

Some of the main achievements in this strategic function included the development and implementation of the Maternal, Perinatal and Child Health Strategy 2011-2020; implementation of the MDG accelerated Framework on Maternal Health, introduction of the Perinatal Information System (SIP) guidelines, capacity building in obstetric and neonatal care for health workers at all levels. In addition, a study to determine the main causes of repeat pregnancy, a study was conducted in 2015. Integrated Management of Childhood Illness’ introduction was a key factor in the decline of morbidity and mortality of diseases affecting children. Regarding reproductive care, drafting of a Sexual and Reproductive Health Policy was done in 2015. The implementation of this policy will address the high rates of teenage pregnancies.

The EPI programme achieved significant milestones over the decades in the eradication of vaccine preventable diseases, introduction of new vaccines, and the maintenance of the EPI at 90% of all antigens at the national level. Despite these achievements, there are challenges in the health sector regarding access, cold storage and transportation to remote and hinterland communities.

The cross cutting priorities of the organization were addressed through workshops and consultations aimed at mainstreaming gender, equity, cultural diversity, human rights and health promotion. Support was provided for the implementation of health promotion initiatives at the community level and the strengthening of health promotion interventions at the national and regional levels.
PAHO/WHO will continue to fulfil its programmatic mandate and will endeavor to maintain its respected position as a health development leader in Guyana based on its ongoing provision of high quality technical cooperation and recognition of the Organization as a trusted partner and honest advocate on global health issues.
Chapter 7
Health in Guyana
over the next 50 Years
Projections and Key Considerations
CHAPTER 7: HEALTH IN GUYANA OVER THE NEXT 50 YEARS: PROJECTIONS AND KEY CONSIDERATIONS

One of the questions asked in the KII was “**What are your predictions for health in the next 50 years?**”

Many of the KIs found this question difficult to answer, as they indicated that this was a projection that they were unable to make, and as a result, a variation of the questions was posed. This variation was “What would you like to see health wise for Guyana in the next 50 years?” Respondents were also asked the question “Do you think that the name change from Ministry of Health to Ministry of Public Health suggests, that public health would be its major focus and therefore the Ministry would ensure that all of the 10 essential public health functions as elaborated by PAHO are efficiently and effective executed or does it wish to ensure that highly specialized services are available to citizens in an equitable manner?” Many of the respondents made recommendations in their answers and some of their recommendations were included in this chapter.

Both of these considerations have resource implications and therefore, the percentage of GDP the government would invest in the health sector would be important. Respondents expressed the view that health promotion and prevention should play a bigger role in the health sector’s response through the utilization of the adage “an ounce of prevention is better than a pound of cure”. They also suggested that delivering the essential public health functions and strengthening PHC would be great routes to go for a developing country like Guyana.

The majority of the KIs expressed their views on what they would like to see for health in the next 50 years. Some of these views were:

a. The MoPH should determine the type of services that it will deliver to the citizens of the country; whether there will be services in keeping with a country with the GDP of Guyana or whether there will be highly specialized consuming more resources than the country can afford. Notwithstanding this, many KIs were hopeful that Guyana would provide highly specialized services to its citizen and be up to date with technological advances.
b. KIs were hopeful that the MoPH would plan appropriately, utilizing evidence for planning; conducting the necessary monitoring and evaluation and utilizing any findings to make the necessary changes for implementation and continuation of the planning cycle. They were also hopeful that the MoPH would move beyond developing strategic plans and develop costed operational plans with clear targets and M&E frameworks. It was recommended that annual budgets should then be developed from these OPs.

c. Key Informants felt that a critical component of this planning was human resources management planning and they were hopeful that the MoPH would make this a priority, so as to ensure that adequate and skilled manpower is recruited, nurtured and treated with respect, dignity and appropriate remuneration. It was felt that in the human resource management planning, the amount of specialists that are required should be determined and appropriate measures taken to ensure that those specialists are recruited into the system.

d. KIs were also hopeful that the MoPH would make health promotion a major focus of its response. Since many of the health issues are behaviour related such as unhealthy diets, lack of physical activity, high risk sexual behavior, inadequate use of condoms and insecticide treated bed nets, it was felt that health promotion would be a major element in addressing these issues.

e. All KIs were expectant, that as is the vision of Health Vision 2020, Guyanese would be among the healthiest peoples in the Caribbean.

It is felt that the country should focus on the following:

- Strengthening of the steering role of Central Ministry of Public Health to include policy coordination, planning and monitoring and evaluation of activities.
- Continuation of Health Sector Reform to fully implement the Regional Health Authority Act 2005 or strengthen the Regional Democratic Councils.
- Development and Costing of Implementation Plans with a Monitoring and Evaluation Framework related to the development of Strategic Plans.
- Strengthening the Planning Unit with Health Planners with different areas of expertise including strategic planning, policy formulation, human resources and research.
• Development and implementation a comprehensive health information system with the requisite human and financial resources for sustainability.
• Strengthen the capacities for full implementation of the International Health Regulations.
• Establishment of a Human Resource Department at the MoPH.
• Ensuring that Health Promotion is cross-cutting in all technical and programmatic areas.
• Ensuring the efficient and effective use of all resources including financial and human.
• Encouraging and supporting the development of a research agenda, including the conduct of operational research, among staff.
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APPENDICES

Appendix I: Development of Progress Health Report and Photo Gallery Book for Health @ 50 in Guyana

Qualitative Interview Instrument for Key Informants

Background

In May 2016, Guyana will be celebrating 50 years as an independent nation. In recognition of this milestone and at this important juncture in the country’s history, PAHO/WHO Guyana Office, in collaboration with the Ministry of Public Health of Guyana, will capitalize on this opportunity to reflect, compile and present the achievements, challenges and changes in the health sector to date and develop a Progress Health Report covering the period 1966-2016 as well as develop a Photo Gallery Book.

These achievements and changes in the health sector have been supported by contributions in various forms from different development agencies as well as key persons and stakeholders together with the Government of Guyana. You have been selected as a key informant to assist us in the data gathering process for the development of the Health Report and the Photo Gallery.

When we conduct the interview we would like to record the interview, take pictures and possible have a follow-up video with you and therefore would like to ask your permission to engage in these activities.

Name: ........................................................................................................................................

Qualitative Interview Questions

1. In what capacity and during what time period were you engaged with the MoPH?
   ..................................................................................................................................................
   ..................................................................................................................................................

2. Kindly describe the organization of the health system in Guyana during your tenure.
   ..................................................................................................................................................
   ..................................................................................................................................................

3. What were the major diseases in Guyana during your tenure?
   ..................................................................................................................................................
   ..................................................................................................................................................
4. How was tracking of these diseases done?

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………………………………………………………………………………………………………

5. What would you say were the major achievements in health in Guyana?
   a. During your tenure?
      …………………………………………………………………………………………………………
      …………………………………………………………………………………………………………

   b. Over the past 50 years?
      …………………………………………………………………………………………………………
      …………………………………………………………………………………………………………

6. What were the major constraints/challenges facing the health sector during
   a. Your tenure
      …………………………………………………………………………………………………………
      …………………………………………………………………………………………………………

   b. Over the past 50 years?
      …………………………………………………………………………………………………………
      …………………………………………………………………………………………………………

7. Given the resources that are now available to the health sector, what do you think should have
   been done or you would have done differently to

   a. Mitigate against those challenges?
      …………………………………………………………………………………………………………
      …………………………………………………………………………………………………………
b. To improve on the achievements?

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8. What recommendations would you make for improving the health sector?

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9. What sources would you recommend/advise us to pursue in order to obtain as much information as possible, especially regarding the first 25 years?

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10. Where do you see Guyana health wise in the next 50 years?

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11. Do you have any photos or data/information that you would like to share with us?

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12. Is there anything that you would wish to add?

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THANK YOU VERY MUCH FOR ALL YOUR TIME
Appendix 2: Development of Progress Health Report and Photo Gallery Book for Health @ 50 in Guyana

Qualitative Interview Instrument for PWRs

Background

In May 2016, Guyana will be celebrating 50 years as an independent nation. In recognition of this milestone and at this important juncture in the country’s history, the Pan American Health Organization/World Health Organization (PAHO/WHO) Guyana Country Office, in collaboration with the Ministry of Public Health (MOPH), will capitalize on this opportunity to reflect, compile and present the achievements, challenges and changes in the health sector to date and develop a Progress Health Report covering the period 1966-2016 as well as develop a Photo Gallery Book.

These achievements and changes in the health sector have been supported by contributions in various forms from different development agencies as well as key persons and stakeholders together with the Government of Guyana. You have been selected as a key informant to assist us in the data gathering process for the development of the Health Report and the Photo Gallery.

The PAHO/WHO Guyana Country Office would greatly appreciate your support in providing your response to the questions below which will contribute to the PAHO/WHO technical cooperation in the Progress Health Report. Depending on the information provided, other alternatives may be explored for clarity.

Name: ......................................................................................................................................................

Qualitative Interview Questions

1. Kindly describe the organization of the health system in Guyana during your tenure as PWR.
   ............................................................................................................................................................
   ............................................................................................................................................................

2. What were the major diseases in Guyana during your tenure?
   ............................................................................................................................................................
   ............................................................................................................................................................

3. How was tracking of these diseases done?
   ............................................................................................................................................................
   ............................................................................................................................................................
4. Outline details of PAHO/WHO’s technical cooperation programme to the country during your tenure.

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........................................................................................................................................................................

5. What would you say were the major achievements in health in Guyana during your tenure?

........................................................................................................................................................................
........................................................................................................................................................................

6. What were the major constraints/challenges facing the health sector during your tenure?

........................................................................................................................................................................
........................................................................................................................................................................

7. Where do you see Guyana health wise in the next 50 years?

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........................................................................................................................................................................

8. Do you have any photos or data/information that you would like to share with us?

........................................................................................................................................................................
........................................................................................................................................................................

9. Is there anything that you would wish to add?

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........................................................................................................................................................................

THANK YOU VERY MUCH FOR ALL YOUR TIME
### Appendix 3: Key Informants, Designations and Periods of Engagement with Ministry of Public Health

<table>
<thead>
<tr>
<th>Area</th>
<th>Surname</th>
<th>Forename</th>
<th>Designation (Final)</th>
<th>Time period</th>
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<tbody>
<tr>
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<td>Green</td>
<td>Hamilton</td>
<td>Minister of Health</td>
<td>1997-2001</td>
</tr>
<tr>
<td></td>
<td>Jeffrey</td>
<td>Henry</td>
<td>Minister of Health</td>
<td>1992-1997</td>
</tr>
<tr>
<td></td>
<td>Norton</td>
<td>George</td>
<td>Minister of Health</td>
<td>2015-present</td>
</tr>
<tr>
<td></td>
<td>Teixeira</td>
<td>Gail</td>
<td>Minister of Health</td>
<td>1980-1987</td>
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<tr>
<td>Administration</td>
<td>Ally</td>
<td>Hydar</td>
<td>Permanent Secretary</td>
<td>2006-2011</td>
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<tr>
<td></td>
<td>Persaud</td>
<td>Durga</td>
<td>Permanent Secretary</td>
<td>1999-2003</td>
</tr>
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<td></td>
<td>Persico</td>
<td>Edward</td>
<td>Permanent Secretary</td>
<td>1988-1991</td>
</tr>
<tr>
<td></td>
<td>Cummings</td>
<td>Rudolph</td>
<td>Chief Medical Officer</td>
<td>1996-2007</td>
</tr>
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<td></td>
<td>Persaud</td>
<td>Shamdeo</td>
<td>Chief Medical Officer</td>
<td>2007-present</td>
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<tr>
<td></td>
<td>Barry</td>
<td>Joan</td>
<td>Principal Nursing Officer</td>
<td>1996-2001</td>
</tr>
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<td></td>
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<td>Grace</td>
<td>Chief Nursing Officer</td>
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</tr>
<tr>
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<td>Corry</td>
<td>Audrey</td>
<td>Matron/ Director Nursing Services</td>
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<td></td>
<td>Archibald-Maison</td>
<td>Janice</td>
<td>Director Food and Nutrition Policy Unit</td>
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<td></td>
<td>Benn</td>
<td>Wilton</td>
<td>Director Health Sciences Education</td>
<td>2011-present</td>
</tr>
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<td>Gordon</td>
<td>Sarah</td>
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<td>Holder</td>
<td>Noel</td>
<td>Director Health Sciences Education</td>
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<td></td>
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<td>Hannoman</td>
<td>Carl</td>
<td>Director UG School of Medicine</td>
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<td>Mitchel</td>
<td>Gladstone</td>
<td>Medical Superintendent PHG</td>
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<td></td>
<td>Williams</td>
<td>Aubrey</td>
<td>Director Planning</td>
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</tr>
<tr>
<td></td>
<td>Yaw</td>
<td>Karen</td>
<td>Director Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Validum</td>
<td>Lloyd</td>
<td>Director (ag) Vector Control Services</td>
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<td></td>
<td>McEwan</td>
<td>Clement</td>
<td>Director NBTS</td>
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<td>Irving</td>
<td>Yvette</td>
<td>Director (ag) Standards and Technical Services</td>
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<td>Butts-Lawrence</td>
<td>Barbara</td>
<td>Director Rehabilitation Services</td>
<td>1997-2015</td>
</tr>
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<td>Massey</td>
<td>Hyacinth</td>
<td>Director Rehabilitation Services</td>
<td>1992-1996</td>
</tr>
<tr>
<td></td>
<td>Luncheon</td>
<td>Roger</td>
<td>Consultant Physician PHG</td>
<td>1986-1992</td>
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<td>Alexander</td>
<td>Holly</td>
<td>Leprologist</td>
<td>1996-2011</td>
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<td></td>
<td>Cumberbatch</td>
<td>Emily</td>
<td>Coordinator Public Health Nurses Training</td>
<td>1997-present</td>
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<tr>
<td></td>
<td>La Fleur</td>
<td>Jennifer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stewart</td>
<td>Bertrand</td>
<td>Senior Dental Surgeon</td>
<td>1987-2005</td>
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<td></td>
<td>Harry</td>
<td>Bhiro</td>
<td>Head of Department of Psychiatry GPHC</td>
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<tr>
<td></td>
<td>Blair</td>
<td>Ninian</td>
<td>Public Health Nutritionist</td>
<td>2012-present</td>
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Appendix 4: Daily Syndromic Surveillance Tally Sheet used in Disease Surveillance

**Ministry of Health**  
**Guyana**

**DAILY SYNDROMIC SURVEILLANCE TALLY SHEET**

Region #: __________ Site: ___________________________ Epidemiological week #: ______

Filled by: [Dr/Mx/Nurse/CHW/Other] ___________ Day filled: ________ Date reported: _____/_____/______

<table>
<thead>
<tr>
<th>SYNDROMES</th>
<th>Under 1</th>
<th>Female</th>
<th>1 – 4</th>
<th>Male</th>
<th>Female</th>
<th>5 – 14</th>
<th>Male</th>
<th>Female</th>
<th>15 and over</th>
<th>Male</th>
<th>Female</th>
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<tr>
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<td></td>
<td></td>
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<tr>
<td><em>Gastroenteritis:</em> Vomiting (b)</td>
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<tr>
<td>Diarrhoea &amp; Vomiting (c)</td>
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<td></td>
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<tr>
<td>Bloody Diarrhoea (d)</td>
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<td></td>
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<td>Undifferentiated Fever/ Febrile systemic Disease</td>
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*The total for Gastroenteritis = a + b + c*  

**Immediate Notification of disease to the National Epidemiologist**

Diseases of international concern (suspected cases): Smallpox, Poliomyelitis, Sever Acute Respiratory Syndrome (SARS), Influenza (new subtype)

Diseases of special concern: Cholera, Plague, Yellow Fever, Viral Haemorrhagic Fever, West Nile Fever, Outbreaks/Unusual events

Please return copy to: The National Epidemiologist, Ministry of Health, 1 Brickdam, Georgetown; through the Senior Health Visitor and RHO.
## Appendix 5: Total number of Cancer Cases by Region 1995

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## Appendix 6: Total Number of Cancer Cases by Region 1996

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### Appendix 7: Total Number of Cancer Cases by Region 1997

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Appendix 8: The Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger
Goal 2: Achieve universal primary education
Goal 3: Promote gender equality and empower women
Goal 4: Reduce child mortality
Goal 5: Improve maternal health
Goal 6: Combat HIV/AIDS, malaria and other diseases
Goal 7: Ensure environmental sustainability
Goal 8: Develop a global partnership for development
Appendix 9: The Sustainable Development Goals

Goal 1: End poverty in all its forms everywhere

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5: Achieve gender equality and empower all women and girls

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10: Reduce inequality within and among countries

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Goal 13: Take urgent action to combat climate change and its impacts.

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development
Health @ 50 in Guyana
Progress Health Report 1966-2016