Report of the Chief Medical Officer

(2012-2014)

Ministry of Health and Wellness

Saint Lucia

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Table of Contents

List of Figures

List of Tables

Minister of Health's Overview

The Ministry of Health, as the governing body for the health sector, has a leading role in shifting our health and disability system towards a wellness model. There is continued emphasis on wellness and promoting well-being in the Saint Lucian population. To ensure the continued sustainability and suitability of the system, the Ministry is committed to moving towards services that focus on keeping people well and ensuring that the policy environment is one that facilitates them taking more control of their health.

Lifestyle factors continue to contribute to long-term conditions that are a growing area of concern, particularly conditions like obesity, diabetes and cardiovascular disease. In recent years, we have also seen an increase in the number of diagnosed cancer cases. The health sector is increasingly focused on prevention, and healthier lifestyles are being promoted through new programmes like Baby Friendly Hospitals and refurbished programmes such as the School Feeding Programme. Keeping Saint Lucians well will require our health system to work closely with other public services and local authorities, in partnership with individuals, non-governmental agencies, private sector partners and communities.

Information technology is a key tool for supporting people to manage their own health and treatment. It also provides a safe and accurate repository for health related data. The Ministry of Health has committed to the establishment of a new Electronic Patient Record that tracks movement of persons across the various healthcare facilities.

We are continuing to focus on improving quality and safety in our health system. This is reflected in the establishment of a Quality Framework and monitoring of key performance indicators for quality and measurable national health targets. In addition, there has been renewed focus on the review of existing guidelines across departments in the sector and development of guidelines and standards where none existed.

The Ministry is investing in workforce development and innovation in service delivery to enable health professionals to better respond to the challenges we face. There has been increased training to support primary health care delivery and in-service training on the management of chronic diseases. However, many of the more complex health issues that some population groups face cannot be solved by the health sector alone. Working more closely with social sector colleagues, provides an opportunity to improve the way we deliver and integrate services to achieve health and wider social outcomes. Initiatives such as the KAPS will establish new norms in cross-agency public service delivery.

Health professionals are also being asked to work together across communities to provide people-driven solutions. Regional and national collaboration means district health teams and communities working together with other partners in the sector to decide on the package of care and means of delivery that is most relevant, effective and sustainable for their communities. We all have a role to play in shifting our health system towards a wellness model in which people are at the centre of everything we do. We are committed to ensuring that we have a local population that is equipped to live longer, healthier lives in their own homes and communities, and have greater ownership of their health and wellbeing.

Our response needs to be guided by timely, reliable and accurate information. This will determine the ongoing efficiency, sustainability and ultimate effectiveness of our health system. This issue of the *Biennial CMO's Report*, will provide an account of health status, and will be used to establish baseline for measuring the health sector's performance which is aimed at supporting the health and wellbeing of Saint Lucians.

Thank you

Mary Isaac
Minister of Health
Ministry of Health and Wellness

Foreword

The Ministry of Health and Wellness is pleased to present this report on the Epidemiological status of Saint Lucia for the three year period, 2012- 2014.

This 2012 to 2014 version has the same purpose as its previously published versions, the last of which was published in 2002. It describes the health situation, its broader determinants and the response of the health sector. It is also intended to inform future health policy, planning, programming, monitoring and evaluation.

It is envisioned that all agencies including all departments of the Ministry of Health, other government ministries and departments, non-governmental organizations, the private sector, academic institutions, regional and international organizations and the general public, will utilize this report as a basis for information and further analysis into our health status, determinants and responses.

Special thanks to the National Epidemiologist, Mr Nahum Jn. Baptiste and staff of the Epidemiology Department who worked diligently on this report. The Ministry intends to produce this report every 3 years and has started in earnest, its preparations for the next report covering the three year period, 2015-2017.

Thank you

Dr. Merlene Fredericks
Chief Medical Officer
Ministry of Health and Wellness

Executive Summary

This report should be regarded as the evidence-based point of reference for the burden of disease in Saint Lucia and will be published every three years for the previously corresponding three-year period. The health status information presented in this report can be used by decision-makers to establish evidence-based policies and programmes to further the goal of improving population health and well-being.

The report consist of two parts. Part 1 provides an overarching view of the health status and the burden of disease. Life expectancy, mortality, chnronic and communicable diseases, and injury are analysed along with behavioural and societal factors that contribute to the health status of our population. The report contains data analysed from various sources; including databases maintained by the Epidemiology Services Unit of the Ministry of Health, morbidity data from hospital discharges from the two main public acute care hospitals and some data from the Community Nursing Department. In part 2 of the report focus is placed on the health system's response.

The analyses indicate that there has been a steady decline in the birth/fertility rate over the past twenty (20) years which suggests a possible move toward an ageing population. The total fertility rate has been below replacement fertility level since 2005. Included in the report are several factors which can be attributed to the decreasing birth rate.

Maternal and reproductive conditions account for the primary cause of hospitalization at the public hospitals, however, ranked among the top ten (10) are also Injuries, Diabetes Mellitus, diseases of the skin, pneumonia and abortions.

The chikungunya epidemic occurred in both the north and south of the island representing a propagated spread of the virus with secondary cases infecting new people who, in turn, served as sources of infection for other cases with the majority of cases occurring in the district of Castries.

While HIV infection rates did not decrease over the years, there has been a notable increase in new infections among men, 25-49 years old.

Syndromic surveillance continued on weekly basis gathering information from all wellness centers to be able to detect early, warning signs of any impending public health emergencies.

Approximately 98% of the Ministry of health's target population were vaccinated against diseases like Dipitheria, Pertussis, Tatanus, Polio and Tuberculosis.

Unfortunately, perinatal conditions are the main contributors to infant mortality which is used as a key indicator for health status in a country. Of note, communicable diseases are no longer among the top 5 leading causes of death but are now marred by Chronic Non-Comminicable Diseases. The top five (5) leading causes of death are: (1) Malignant Neoplasms (2) Heart Disease (3) Cerebrovascular Diseases (4) Diabetes Mellitus (5) Hypertensive Diseases.

Injuries are significant causes of disability for young children and were ranked among the top 10 leading causes of hospitalization for children 1-4 years old.

There was a marked decline in the proportion of births due to teenagers over the past decade, however, over the past two years; the teenage birth rate has increased steadily.

Part of the national health policy and strategic plan for the Ministry of Health are eight objectives. These objectives for the health sector are indicative of the organization of the ministry into subdivisions or departments, which are responsible for the various health programmes, including preventative services, health education and promotion, environmental health, human and gender related services, hospital and curative services.

Within the reporting period, new legislation to assist with the strengthening of policies aimed at improving health and wellness were enacted. Some of these gave rise to the establishment of various councils tasked with the responsibility to govern and monitor the practice of the designated professions.

The Environmental Health Department faced several human resources, operational and strategic issues during the reporting period. Recommendations have been documented in an effort to propel the department to meet the needs of the changing health culture and adherence to international environmental health standards like the development and implementation of the National Environmental Health Policy.

The growing evidence of epidemiological and economic impact, necessitates a national response to the problem. There is a need for better evidence about risk factor control, a reorientation of the health system to chronic care management and a concerted, strategic, and multi-sectorial policy approach, underpinned by solid research, to help reverse the negative trajectory for the premature mortality burden of chronic disease. The results from the report provide powerful input for policy actions when combined with information about efficacious, cost-effective interventions.

There is a need to review the completion of death certificates to provide information on comorbid conditions as well as other socio-demographic data for more detailed analysis. The ministry needs to improve the completeness of the medical cause of death for many disease conditions and risk factor because of its importance to policy decision making.

Future publications of this report should include data representative of health status regarding oral and mental health conditions as these present risk factors related to CNCDs. Some data deficiencies exist for the capture of risk factors. This data can facilitate additional analysis when determining proportions attributable to the same. In this version of the report, no link exists between the health situation and the necessary responses to alleviate symptoms and improve the health status of residents.

1: Overview

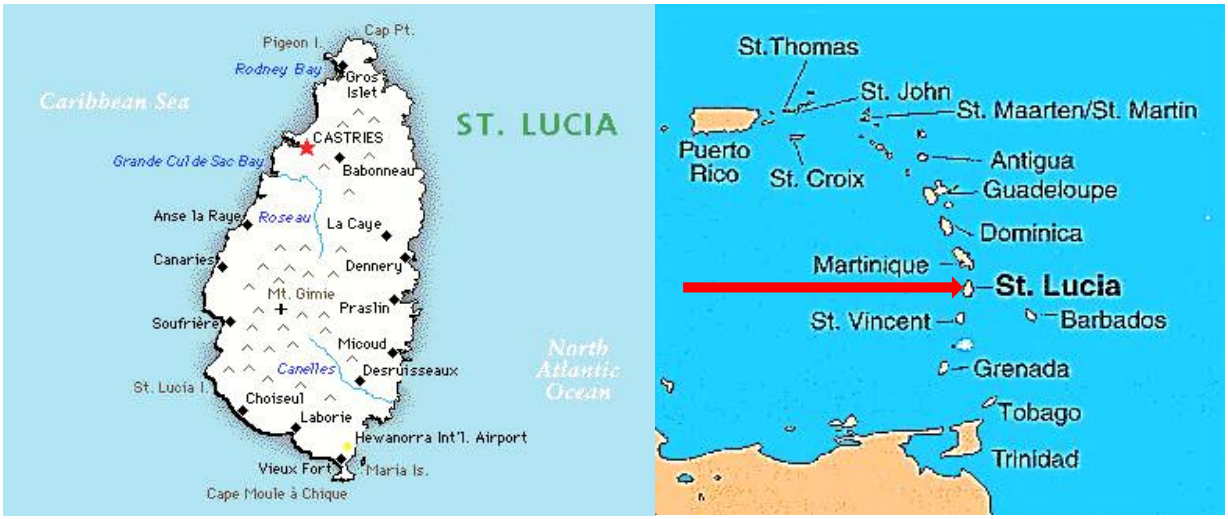
1.1: Brief Physical Description

Geography

Saint Lucia, the second largest of the Windward Islands of the Eastern Caribbean, is located 21 miles south of Martinique and 26 miles north of Saint Vincent and the Grenadines.

The capital city is Castries – located in the district of the same name, where about 29% of the population lives. Major towns include Gros Islet, Soufriere and Vieux Fort. Castries and Gros Islet are located in the north, Soufriere in the west and Vieux Fort in the south.

Figure 1: Map of Saint Lucia and its location in the Eastern Caribbean



Physical Characteristics

Saint Lucia measures about 27 miles in length and 14 miles in width, with a land area of 238 square miles (616 sq. km). It is volcanic in origin, very mountainous, with the main ridge running almost through its entire length and reaching its highest point at Mount Gimie which is 3,145 feet above sea level. A chain of wooded mountains runs from north to south and from them flow many streams into fertile valleys. Two unique, famous and spectacular mountain peaks (called the Pitons) rise straight out of the sea - Petit Piton at 2,461 feet near the town of Soufriere and Gros Piton at 2, 619 feet in the village of Choiseul - both along the west coast.

Saint Lucia has a tropical, humid climate moderated by northeast trade winds that allow for pleasant year-round conditions. Mean annual temperatures range from 26 °C (78.8 °F) to 32 °C (89.6 °F) at sea level and drop to an average of 13 °C (55.4 °F) in the mountain peaks. Annual rainfall accumulates to approximately 2,000 millimetres (78.7 in), with most precipitation occurring during the June to November wet season.

Hurricanes are the most severe climatic disturbance and have been known to cause extensive damage. Although St. Lucia has historically been spared from serious hurricane destruction, Hurricane Allen devastated the agricultural sector and claimed nine lives in 1980. More recently, in 2010, Hurricane Tomas claimed seven lives and also caused extensive infrastructural and agricultural damage, particularly to the island's burgeoning cocoa crop.

Communications

There are various air links to Saint Lucia from North America and Europe, with most international flights from Europe connecting via London. Saint Lucia has airway links offered by Leeward Islands Air Transport (L.I.A.T.) with Antigua, Dominica, Martinique, Saint Vincent, Barbados and Trinidad. With other carriers offering flights to other Caribbean territories.

Saint Lucia has two airports – the international airport of Hewanorra (UVF) in Vieux Fort (in the south of the island) and a smaller inter-regional airport George F.L. Charles (SLU) in Castries (in the north) where regional connecting flights are based.

Local travel on the island can be done via a rented vehicle, hired taxi or commute with locals on a minibus. Local travel agencies also offer group or individual tours. A network of roads connects all places of interest, towns and villages to the main road. Roads are generally in a good state of repair. It takes about 75 minutes to get from Castries to Vieux Fort through Dennery and Micoud on the Atlantic coast (East), taking the main route through the middle of the island. The journey from Castries to Soufriere takes about 90 minutes. This road takes you along the Caribbean coast (West) and is quite taxing, with a narrow and winding road.

The island is equipped with a modern and efficient telecommunications system. St. Lucia's phone system is run mainly by international companies with branches across the island.

1.2: Socio-Economic Profile

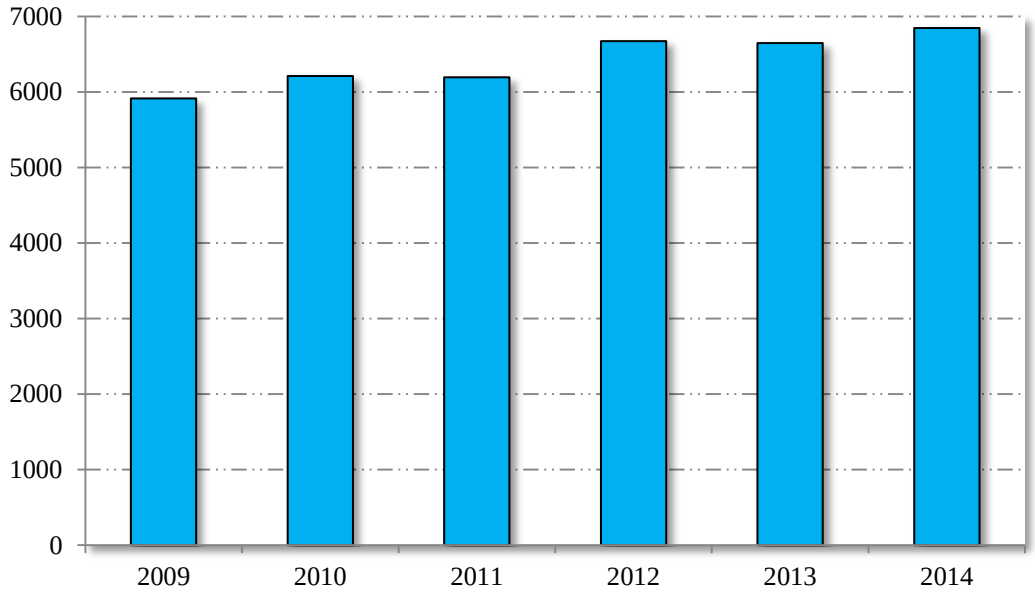
Per Capita Gross Domestic Product (GDP)

Economic indicators of Saint Lucia for 2014 suggest lukewarm economic activity following declines in production for 2013 and 2014; this was due in part to the lingering impact of the global economic downturn coupled with domestic structural growth inhibiting factors.

Per Capita GDP increased by about 3% in 2014 following a 4% decline in 2013. Real GDP declined by 0.7%, influenced by weak performances of the main sectors of the economy except tourism.

According to the data from the Economic Research Unit of the Ministry of Finance, despite slow economic growth in 2014, economic fundamentals remain solid, and GDP growth should recover in the future.

Figure 2: Per Capita GDP by year, 2009 to 2014



Source: Economic Research Unit, Ministry of Finance, 2014

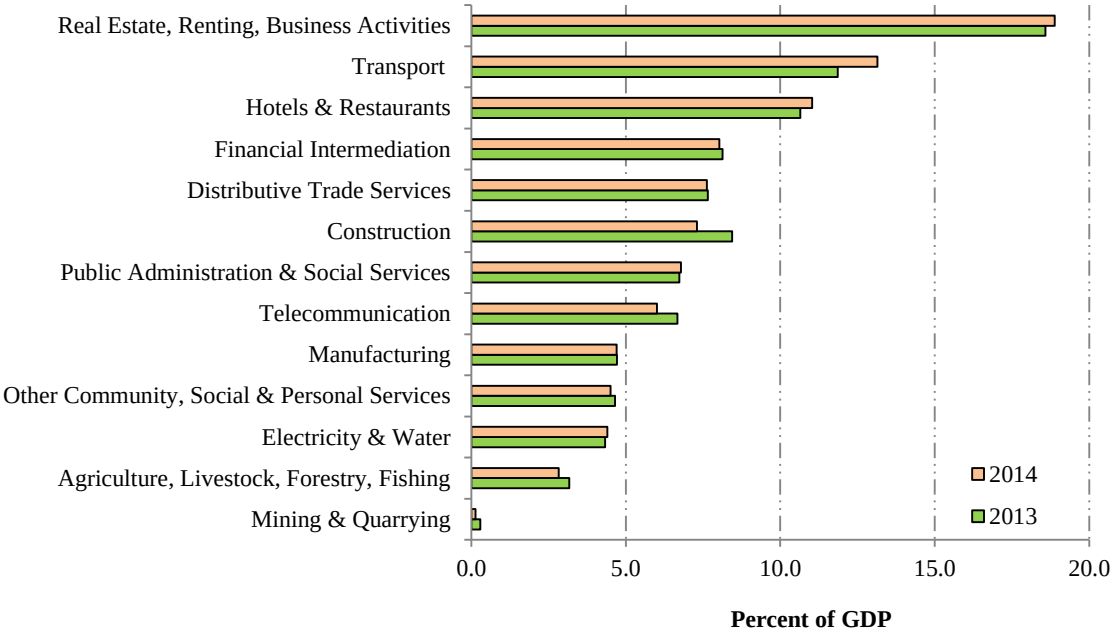
Sector Contribution to GDP

"Real estate, renting, business activities" is the main contributor to the economy (19%), followed by "Transport" (13%) and "Hotels and restaurants" (11%). The relative contributions by the sectors remained roughly the same for 2013 and 2014 except for the "Transport" sector which increased and the "Construction" sector which decreased in 2014 (*see Figure 3*).

Tourism is vital to Saint Lucia's economy because of its relationship with other key social and economic sectors. Its economic importance is expected to continue to increase as the market for bananas becomes more competitive. Tourism tends to be more substantial during the dry season

(January to April) which coincides with the winter season in Europe and North America. Saint Lucia attracts tourists because of its tropical weather and scenery, its numerous beaches and resorts, rich cultural heritage and hospitality. Other tourist attractions include a drive-in volcano and Sulphur Springs, the Botanical Gardens, the Majestic twin Peaks "The Pitons" (a world heritage site) the rain forests, nature trails, waterfalls, underwater sites and Pigeon Island National Park. The majority of tourists visit Saint Lucia as part of a cruise. Most of their time is likely to be spent in Castries, although Soufriere, Marigot Bay and Gros Islet are popular locations to visit.

Figure 3: Percentage distribution of the GDP by sector, 2013 and 2014



Source: Economic Research Unit, Ministry of Finance, 2014

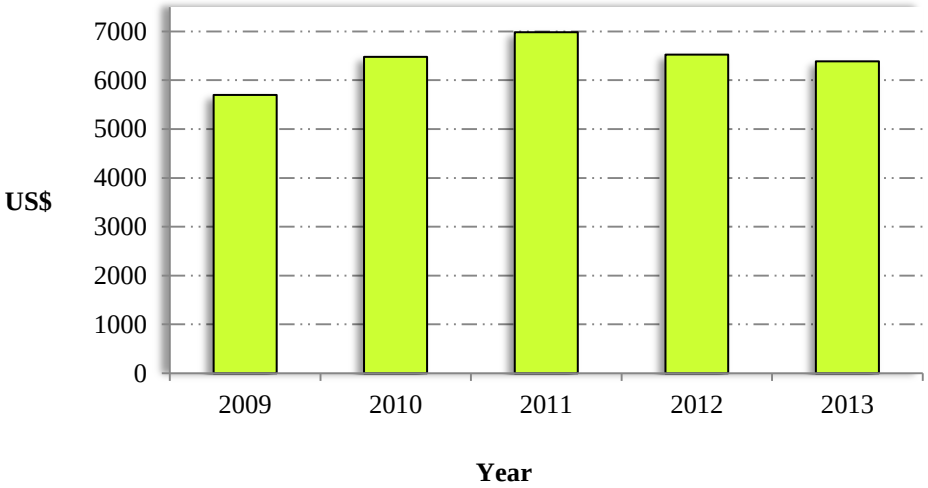
The lower rate of contraction in economic activity in 2014 can be elucidated by continued growth in tourism buttressed by expansions in other sectors closely associated with tourism such as the “Transport” and “Hotel and Restaurant” sectors. The global economic recovery, increases in demand for international travel, specific weather related events and an increase in airlift augured well for Saint Lucia in 2014. The island recorded 1.034 million visitors in 2014, the highest in the history of tourist arrivals for the destination as record numbers were realized for both stay-over and yacht arrivals.

However, lower activity levels in sectors such as construction, agriculture and manufacturing has resulted in a reduction in overall economic activity.

Consumption Per Capita

Consumption is the value of goods and services bought by people. It is normally the largest component of GDP. Many persons judge the economic performance of their country mainly in terms of the level and dynamics of consumption. After a steady increase from 2009 to 2011, per capita consumption fell in 2012 and 2013 to the level noted in 2010. Per capita consumption was about US$ 6400 in 2013 (*see Figure 4*).

Figure 4: Per capita consumption (in US$) by year, 2009 to 2013



Source: Economic Research Unit, Ministry of Finance, 2014

Dependency, Labour Force and Employment

Persons aged 15-64 years make up the productive sector of the population – 120,897 which represent about 70% of the population for 2014. Dependents comprise children (0-4 years) and the elderly (65+ years). As the ratio of dependents to productive persons (dependency ratio) increases, the burden on the productive sector of the population to maintain the upbringing and pensions of the economically dependent also increases. This results in direct impacts on financial expenditures on social security, as well as many indirect consequences. The dependency ratio for 2014 was 41 dependents per 100 persons in the productive sector.

The labour force refers to the total adult population available (either employed or seeking employment) to the labour market at a specific time. Specifically, it is the non-institutionalized population 15 years of age and over who, during the reference week (in which the employment survey was taken), were employed or unemployed.

The total labour force was estimated at 98,286 persons in 2014 – about 72% of the population 15 years or older; 18,926 young persons (15-24 years) were in the labour force, representing about 59% of all young persons for 2014. Relatively, more males than females are available for employment for the youth and overall (*see Table 1*).

The unemployment rate for 2014 was 24%, and 51% among the youth; comparatively more females than males were unemployed.

Table 1: Labour force and employment statistics by sex, 2014

Item	Total	Male	Female
Labour force (Total)	98,286	52,228	46,058
Participation rate	72%	78%	66%
Youth (15-24 years) in labour force	18,296	9,611	8,685
Participation rate	59%	61%	57%
Number unemployed (Total)	23,961	10,892	13,069
% unemployed	24%	21%	28%
Number of youth unemployed	9,367	4,526	4,841
% unemployed	51%	47%	56%

Source: Statistics Department, Ministry of Finance & Economic Affairs

Poverty Levels

The Poverty Assessment Study of Saint Lucia (2005), sought to understand the occurrence of poverty in St. Lucia both from official data sources and from the people themselves. The findings are derived from three main sources: a national survey, community-level situational analyses, and an analysis of key institutions and organisations. The objective was to attain measures to address the immediate conditions of poverty as well as the underlying factors that contribute to such poverty.

Summary of Findings of the Study

About 18.7% of households and 25.1% of individuals were poor on the basis of their reported expenditures on food and non-food items. Furthermore, 5.3% of households, and 7.1% of individuals were indigent: based on their reported expenditures, they did not have the wherewithal to ensure that their basic food requirements for healthy existence could be achieved.

Poverty was more pronounced in the rural areas than in the urban. Randomly selected communities generally displayed greater dominance of female headed households. Among poor males, the largest percentage was engaged in Agriculture and Forestry followed by Construction. In the case of poor women, the Manufacturing Sector was the single most important sector of employment, followed by Wholesale and Retail activities or Distribution.

About 91% of heads of households in the lowest quintile had attained primary level education; female heads of households in the lowest quintile were almost totally limited to the primary level (97.2%). There is an inverse relationship between socio-economic status and gender disparity in education; the higher the quintile the lower the gender disparity in education.

From the study, there was some limited evidence of gastroenteritis and dysentery/diarrhoea which could reflect problems of potable water supply. Chronic non-communicable diseases, such as diabetes and hypertension, were also significant. There was almost universal immunisation coverage for measles and diphtheria.

The study found that there are problems in the coordination and reach of family planning services. However, in addition to these problems, it was also noted that there were attitudinal factors that resulted in the indifferent use of available family planning services by poor households.

The main problem experienced in most communities was poor garbage collection and disposal, and effluent control. Eight of the communities surveyed had serious deficiencies in access to safe toilets and in some communities, "people defecated wherever they will". Indiscriminate cultivation of hillsides, and as a result, severe erosion, constituted a major problem for sustainable environmental management.

The poor, like the better-off, lived in their own dwellings but the poor were more likely to suffer inadequate potable water supply and toilet facilities.

Most of the poorer communities displayed an absence of community organisation and thus an inability to take collective action to address some of their own problems. However, where there was such organisation, the community was better mobilised in engaging external agencies and in accessing support.

The main causes and sustaining factors of poverty in St. Lucia were identified as follows:

- *Decline in earnings from the Banana Industry*: Falling banana earnings have hurt the farming sector and small farmers in particular. However, given the relationship of the industry to Transport and other sectors, the decline has had a ripple effect on other areas of the economy, inducing poverty beyond the agricultural sector.
- *Decline in wage competitiveness, export-oriented light manufacturing and assembly operations*: Light manufacturing, which had previously made an important contribution to the economy and to the diversification process, suffered from developments in the international economy.
- *Sluggish response in the creation of new viable activities, or in increasing existing activities to take up the slack - caused by the decline in the two sectors mentioned above*: The response of the country to the decline in two areas of its tradable sector, was inadequate to compensate for reduced incomes and employment. Non-traditional agricultural activity could not produce output to maintain foreign exchange earnings from agriculture, neither did the growth in the Informatics Sector, Tourism, and newer manufacturing activities.

Education Indicators

Enrollment in schools represents the largest component of the investment in human capital in any society (Schultz, 2002). Education, schooling and human capital development are often used interchangeably. The human resources of a nation are considered to be the engine of growth of the country. These must however be adequately developed and efficiently utilized. Education confers on the recipients a disposition for a life-long acquisition of knowledge, values, attitudes, competence and skills (Aliu, 2001). Hence, rapid socio-economic development of a nation has been observed to depend on the quality of its human capital. Therefore, primary and secondary education is central to the development process.

Primary education is compulsory for all children in Saint Lucia and the formal school age ranges from 5-11 years (17,232 in 2013); the official age range for secondary education is 12-17 years (20,465 in 2013).

The Gross Enrolment Ratio (GER) is the total enrolment in education (primary or secondary), regardless of age, expressed as a percentage of the population of official education age. GER can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition.

The GER in primary schools remained consistently high and similar for both sexes during 2009 through 2014; for secondary schools during the same period the GER for males persisted at high levels while the corresponding ratio for females fell from 64% to 56%, further widening the gender gap.

Table 2: Gross enrolment rate (per cent) by education level, gender and year – 2009 to 2014

Item	Gender	2009	2010	2011	2012	2013	2014
% Enrollment in primary schools	Both	98	97	96	95	94	93
	Male	99	97	96	96	96	95
	Female	97	97	95	94	93	92
% Enrollment in secondary schools	Both	72	71	67	65	64	64
	Male	84	82	78	74	74	74
	Female	64	62	60	68	56	56

Source: 1. *Education Statistical Digest, 2014;2. Epidemiology Unit, 2014*

There is the need for research to explain the gender gap in secondary school enrollment. What is the role of household variables in children's enrolment? Are the factors affecting enrolment the same or different for boys and girls? These queries fuel the search for empirical verification and quantification of the issues raised.

1.3: Demography

Population by Age and Gender

The total mid-year population of Saint Lucia was estimated at 172,255 for 2014. Females comprise about 51% and women of child-bearing age (15-44 years) about 24%. Children (<15 years) represent about 21% and the elderly (65 years or older) 9%.

Table 3: Estimated midyear population by age and gender, 2014

Age Group (in years)	Total		Male		Female	
	No.	%	No.	%	No.	%
Under 1	1,992	1.2	1,000	0.6	992	0.6
1-4	9,126	5.3	4,540	2.6	4,586	2.7
5-14	24,796	14.4	12,575	7.3	12,221	7.1
15-24	29,878	17.9	14,679	9.1	15,199	8.8
25-44	50,925	30.2	24,757	14.9	26,168	15.2
45-64	34,504	22.1	15,242	10.9	19,262	11.2
65 or Older	13,761	9.0	4,959	3.8	8,802	5.1
Total	172,255	100	77,752	49.3	87,230	50.7

Population by District and Gender

The districts presented are based on the catchment areas covered by the Health and Wellness Centres located throughout the country. Catchment areas were derived from settlements surveyed during the 2010 Population Census. The 11 districts may be aggregated into the 8 health regions.

The District of Castries (29% of total population) is the most densely populated by far; Gros Islet (15%), Vieux Fort (9.7%) and Micoud (9.4%) are respectively ranked the 2nd, 3rd and 4th most populated districts. The top 2 most populated districts are located in the north of the island – which comprise the districts of Gros Islet, Castries, Babonneau, Anse La Raye and Dennery.

Table 4: Distribution of mid-year population by district and gender, 2014

District	**Male**	**Female**	**Total**	**% of Total**
Anse La Raye	6,385	6,211	12,596	7.3
Babonneau	6,430	6,343	12,773	7.4
Canaries	1,060	1,021	2,081	1.2
Castries	24,194	25,536	49,730	29
Choiseul	3,303	3,346	6,649	3.9
Dennery	6,437	6,455	12,892	7.5
Gros Islet	12,522	13,675	26,197	15
Laborie	3,934	4,031	7,965	4.6
Micoud	8,037	8,172	16,209	9.4
Soufriere	4,261	4,169	8,430	4.9
Vieux Fort	8,462	8,271	16,733	9.7

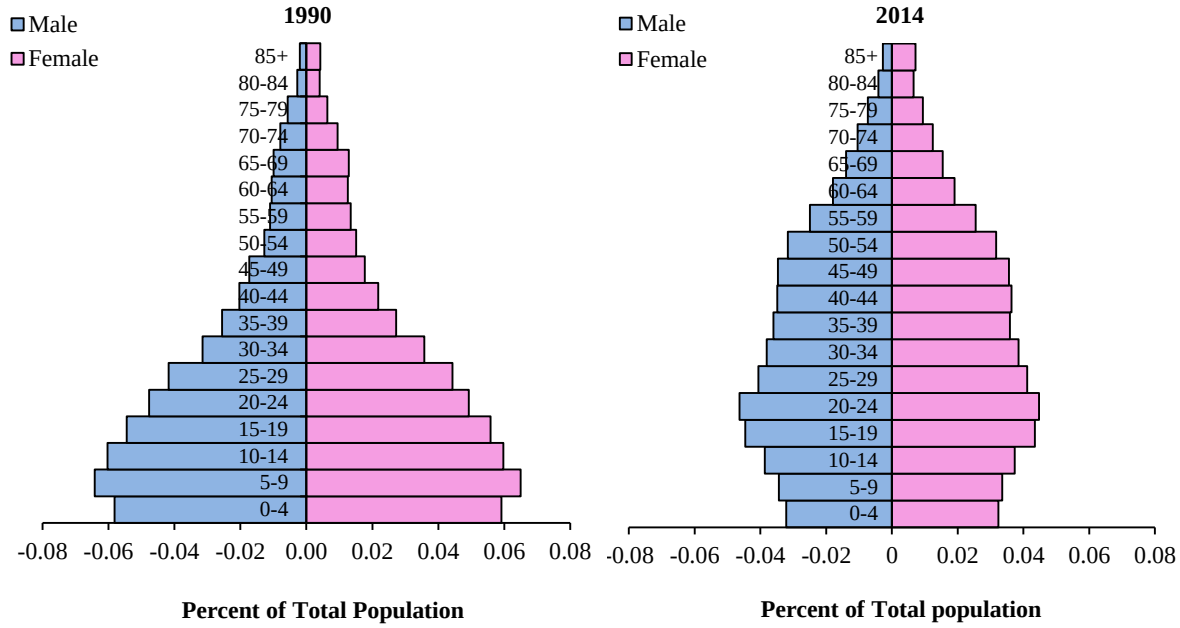
Source: *Government Statistics Department, 2014*

Population Pyramid

The age and sex composition is both determined by, and is a powerful determinant of the numbers of births, deaths and level of migration in a population. The number of births, deaths and level of migration in a population do not occur equally to people of all ages and both sexes; alternatively, they tend to be concentrated among specific age and gender subgroups, for example, women of child-bearing age, older persons, the very young, etc. Therefore, the number of births, deaths and migration occurring in a population at a particular time are determined not only by its overall size and levels of fertility, mortality and migration, but also by its age and sex structure.

On the other hand, the structure of the population is entirely determined by, and provides a record of past fertility, mortality and migration. Thus, a close two-way relationship exists between vital events and the age and sex structure of the population.

Figure 5: Population pyramid, 1990 and 2014

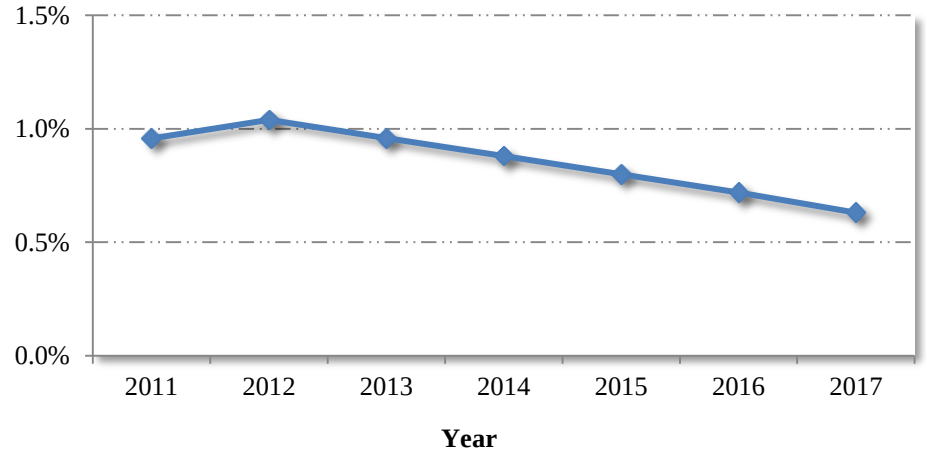


The population pyramid for Saint Lucia for 2014 displays a progressively narrowing base over the past two decades, revealing signs of reduced fertility and an aging population; a young age structure will produce a roughly triangular pyramid with a broad base while an old age structure will yield a more rectangular structure with a relatively narrow base, as evidenced by the 2014 population pyramid.

Population Growth Rate

The mid-year population of Saint Lucia grew by 1.04% over the population for 2011. It was estimated that the annual growth rate of the population would fall to just below 1% in 2013 and will continue on a gradual and steady decline to 0.63% per annum through 2017.

Figure 6: Annual growth rate of mid-year population, 2011 to 2017

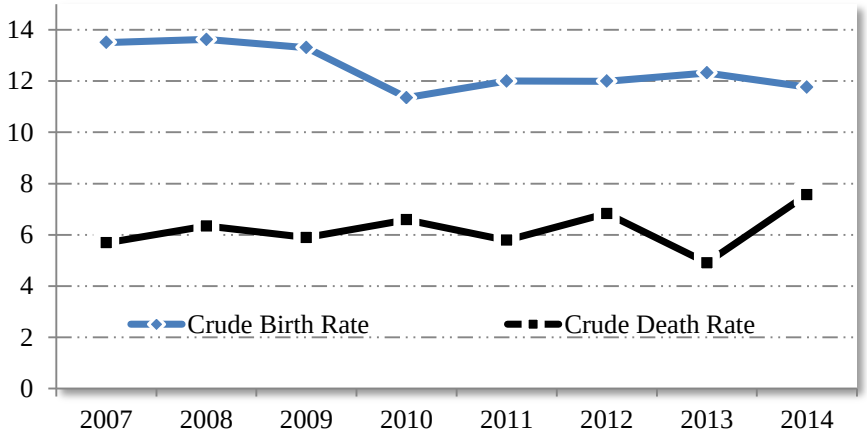


Crude Birth and Death Rates (per 1,000 Population)

The population growth rate is determined by the Crude Rate of Natural increase (Crude Birth Rate (CBR) less Crude Death Rate (CDR)) along with the Net Migration Rate (difference between Immigration Rate and Emigration Rate).

Since 2010 the CBR/CDR divide has narrowed, primarily due to lower fertility. However, natural increase remains the more important determinant of population change in Saint Lucia.

Figure 7: Trends in Crude Birth Rates (CBRs) and Crude Death Rates (CDRs), 2007 to 2014



Total Fertility Rate (TFR)

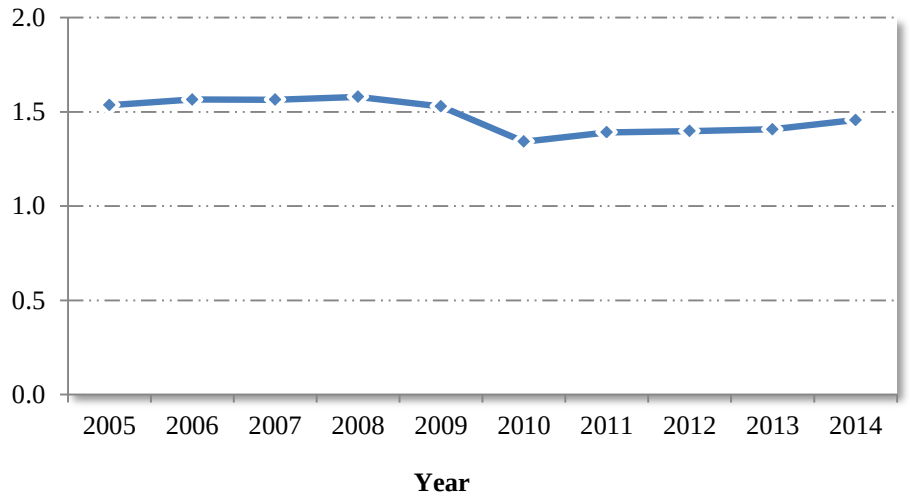
The Total Fertility Rate (TFR) measures the number of children a woman would have if she: (a) survived through the age of her reproductive life (generally taken as 44, 45 or 49 years); and (b) experienced exactly the Age Specific Fertility Rates (ASFR) for the year in question.

Replacement fertility is the TFR at which women give birth to enough babies to sustain population levels. If there were no mortality in the female population until the end of the childbearing years then the replacement level of TFR would be very close to 2.0, and controlling for mortality about 2.1. In 2014 the TFR for Saint Lucia was 1.5, which is below replacement fertility level.

The TFR has been below replacement fertility level since 2005. From 2005 to 2009 the TFR was slightly above 1.5; it fell to its lowest level for the past decade in 2010 (1.3) and then increased steadily to just below 1.5 from 2010 to 2014 (*see Figure 8*).

Plausible factors affecting Saint Lucia's birth rate and TFR include: (i) Increased and increasing urbanization – people living in urban areas usually have increased access to family planning services and hence, tend to have fewer children than those living in rural areas; (ii) Cost of raising and educating children is much more costly in recent years and children do not enter the labor force until their late teens or early twenties; (iii) Increased educational and employment opportunities for women, who now have greater access to education and paid employment outside the home; (iv) Availability of abortions – abortions are legal in Saint Lucia, under certain conditions; and (v) Availability of private and public pension systems – pensions may eliminate parent's need to have many children to help support them in old age.

Figure 8:Total Fertility Rate (TFR) by year, 2005 to 2014



Infant Mortality Rate

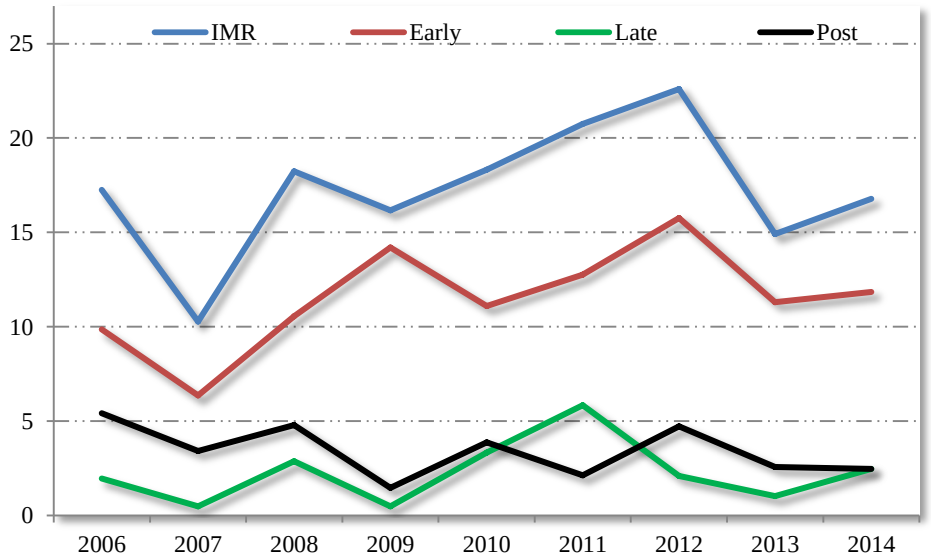
The infant mortality rate (IMR) is the number of deaths of infants (<1 year old) per 1,000 live births. The rate is often used as an indicator of the level of health in a country.

Deaths occurring during the first year of life tend to be concentrated during the first week or month. In addition, the causes of infant deaths during the neonatal period tend to be different from those which occur later. Thus, the IMR is often disaggregated to three levels: the Early Neonatal (<7 days), Late Neonatal (7-27 days) and Post-Neonatal (28 days – 11 months) Mortality Rates.

The IMR for 2014 was 17 per 1,000 live births, increasing marginally from 15 in 2013. During the past 9 years the IMR ranged between 10 and 23 per 1,000 live births. About 67% of all infant deaths for 2006 to 2014 occurred before the first week of life; late neonatal and post-neonatal mortality rates remained below 5 per 1,000 live births for most of the period (*see Figure 9*).

The extent and role of maternal risk factors in fetal and infant health outcomes need to be fully understood and addressed in order to avert the occurrence of preventable fetal and infant deaths. These factors include pre-term birth, low birth weight, obesity, diabetes, hypertension, alcohol, tobacco, HIV, rural residence and psychosocial stressors.

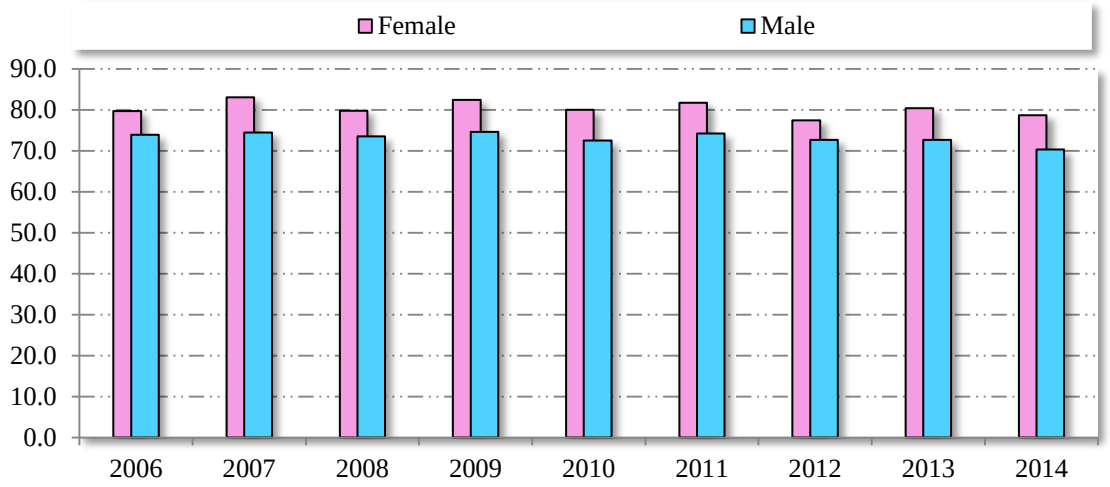
Figure 9: Trends in IMR, Early, Late and Post Neonatal rates per 1,000 live births per year, 2006 to 2014



Life Expectancy by Gender

Life expectancy at birth reflects the overall mortality level of a population. It is an elaborate summary of the mortality pattern that prevails across all age groups in a given year. In 2014, life expectancy at birth for males was 70.3 years and 78.7 years for females. Women live longer than men all around the world. During 2006 to 2014, the gap in life expectancy between the sexes ranged between 5 and 9 years and was 8 years for 2013 and 2014. Since 2006, life expectancy at birth has remained fairly constant for both sexes (*see Figure 10*).

Figure 10: Life expectancy at birth by sex and year, 2006 to 2010



Similarly, life expectancy at age 60 reflects the overall mortality level of a population over 60 years. In 2014, the male population aged 60 years can expect to live another 18.4 years on average, 3.2 years less than in 2006; for females, life expectancy at age 60 is 23.2 years, 1.8 years less than that in 2006.

Gender-specific cause Mortality 60+ 2006 and 2014

Table 5: The 5 leading causes of death in males and females ≥60, 2006 and 2014

Principal Cause	2006						2014					
	MALE			FEMALE			MALE			FEMALE		
	No	Rank	%	No	Rank	%	No	Rank	%	No	Rank	%
Malignant neoplasms (C00-C97)	82	1	32	46	4	18	109	1	29	70	1	22
Diabetes mellitus (E10-E14)	19	4	7.5	54	2	21	37	4	10	64	2	20
Heart diseases (I05-I09; I20-I52)	51	2	20	52	3	20	76	2	20	60	3	19
Cerebrovascular diseases (I60-I69)	46	3	18	55	1	22	54	3	14	55	4	17
Hypertensive diseases (I10-I15)	19	4	7.5	22	5	8.6	29	5	7.7	41	5	13
Total top 5 principal causes	217		86[1]	229		90[1]	305		80[1]	290		91[1]

[1] Proportion of deaths among ≥60 year olds due to the top 5 leading causes

Selected Demographic Indicators, 2012-2014

Table 6: depicts the selected demographic indicators for the period 2012-2014. Table 5: Selected demographic indicators by year, 2012 to 2014

Indicator		2012	2013	2014
Mid-year population		169,115	170,745	172,255
Women of child-bearing age (15-44 years)		40,851	41,150	41,367
Total births		1,934	1,975	2,066
Live births		1,903	1,944	2,026
Crude birth rate (per 1,000 population)		11	11	12
Live births for females 15-44 years		1927	1,963	2,052
Fertility rate (per 1,000 females 15-44 years)		47	48	50
Still births		31	31	40
Still birth rate (per 1,000 total births)		16	16	19
Total deaths		1,159	1,093	1,302
Death rate (per 1,000 population)		6.9	6.4	7.6
Natural increase		744	851	724
Natural increase rate (per 1,000 population)		4.4	5.0	4.2
Infant deaths		43	29	34
Infant mortality rate (per 1,000 live births)		23	15	17
Perinatal deaths		61	53	64
Perinatal death rate (per 1,000 total births)		32	27	31
Neonatal deaths		34	24	29
Neonatal mortality rate (per 1,000 live births)		18	12	14
Child deaths (1-4 years)		6	3	1
Age specific child death rate (per 1,000 pop. 1-4 years)		0.64	0.32	0.11
Maternal deaths		1	1	2
Maternal mortality rate (per 1,000 live births)		0.53	0.51	0.99
Life expectancy at birth	*Total*	75.1	76.5	74.4
	Male	72.7	72.7	70.3
	Female	77.4	80.4	78.7

2. Health Situation

2.1 Morbidity

Hospital Discharge Diagnoses

The data presented under this subsection is garnered from the two main public hospitals, Victoria (in the north of the island) and St. Jude (located in the south). It is based on the *principal diagnosis,* which is the diagnosis that is responsible for a patient's hospitalization. A patient can be admitted to the hospital with multiple conditions or diagnoses. The principal diagnosis can affect other components of the patient's hospital stay including the length of stay, health care costs and procedures performed.

Ten Most Frequent Conditions in Public Hospitals by Rank for 2014

In Saint Lucia, there were 9,978 hospital discharges in the 2 public hospitals – 579 discharges per 10,000 population in 2014. The 10 most frequent principal diagnoses represented 46% of all discharges in 2014 – 271 discharges per 10,000 population (*see Table 6*).

Table 7: The 10 most frequent conditions of hospitalization by condition, ICD 10 codes, rank, with percent of total discharges per 10,000 population

Cause of Hospitalization	ICD Code	Rank	No	% of Total	Rate
Delivery	O80-O84	1	1298	13	77
Circumstances related to reproduction	Z30-Z39	2	1096	11	65
Injuries	S00-T14	3	472	4.7	28
Maternal care related to fetus and amniotic cavity and delivery problems	O30-O48	4	295	3.0	17
Other maternal disorders predominantly related to pregnancy	O20-O29	5	285	2.9	17
Chronic lower respiratory diseases	J40-J47	6	282	2.8	17
Diabetes mellitus	E10-E14	7	230	2.3	14
Pneumonia	J12-J18	8	214	2.1	13
Diseases of the skin and subcutaneous tissue	L00-L99	9	202	2.0	12
Abortion	O03-O06	9	202	2.0	12
Total for 10 Leading Causes of Hospital Discharges			**4576**	**46**	**271**

Source: Medical Records Departments, Victoria and St. Jude Hospitals

Maternal and reproduction conditions dominated the top 10 reasons for hospitalization in Saint Lucia for 2014. "Delivery" was the most common, accounting for 1,298 discharges in 2014 (13% of all hospitalizations). "Circumstances related to reproduction" was the second most common reason (11% of all hospitalizations). Respectively, "Maternal care related to foetus and amniotic cavity and delivery problems" (3.0%), "Other maternal disorders predominantly related to pregnancy" (2.9%) and "Abortion" (2.0%) were ranked as the 4th, 5th and 9th most common causes of hospitalizations. Together, those conditions represented about 69% of the top 10 reasons for hospitalization. Abortions as used here represents spontaneous abortions or miscarriages, medical termination of pregnancy and unspecified abortion.

"Injuries" ranked 3rd with 472 hospitalizationals (4.7% of all discharges).

Two (2) respiratory illnesses – "Pneumonia" and "Chronic lower respiratory diseases" were also among the 10 most frequent principal diagnoses in 2014. "Chronic lower respiratory diseases" was the 6th most common reason (2.8%) and "Pneumonia" was ranked the 8th (2.1%).

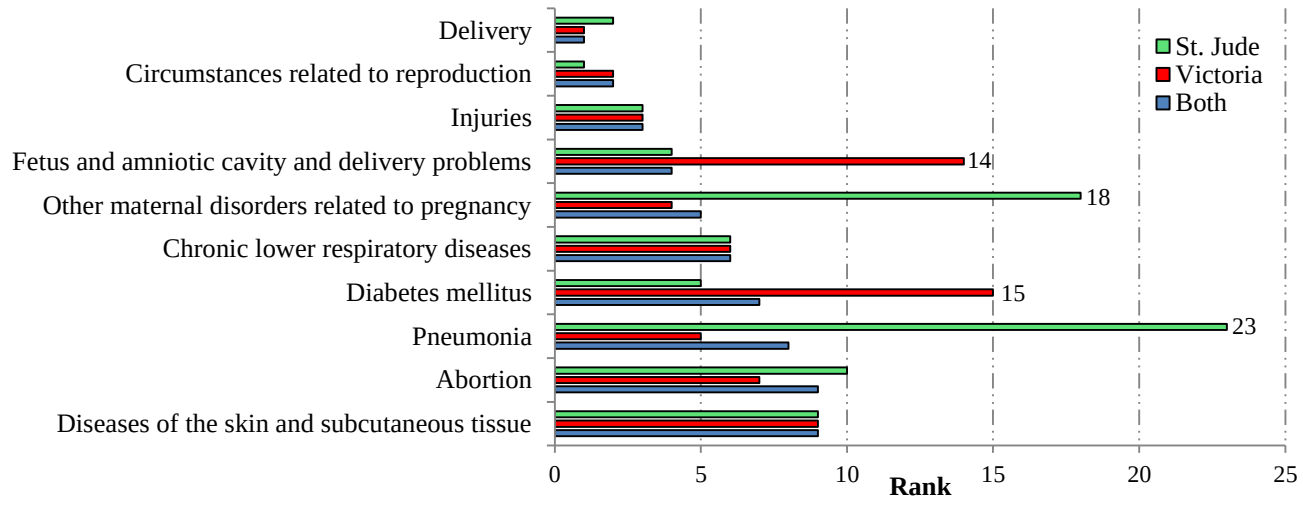
"Diabetes mellitus" is the 7th most frequent reason for hospitalization with 2.3% of all discharges.

"Diseases of the skin and subcutaneous tissue", also ranked 9th (2.9%, same as "Abortions") completes the 10 most frequent reasons for hospitalizations in Saint Lucia for 2014.

The Ten Most Frequent Conditions in Public Hospitals, by Hospital

A comparison of the 10 most frequent conditions for hospitalization for both public hospitals with that of each hospital discloses important similarities and differences. The lower the rank, the higher the frequency for the respective facilities and both combined. "Injuries" (ranked 3rd), "Chronic lower respiratory diseases" (ranked 6th) and "Diseases of skin and subcutaneous tissue" (ranked 9th) are ranked exactly the same for both public hospitals (*see Figure 11*).

Figure 11:The 10 most frequent conditions in public hospitals by rank, by hospital, for 2014



Source: Medical Records Departments, Victoria and St. Jude Hospitals

Regarding conditions not appearing among the 10 most frequent, at Victoria Hospital "Maternal care related to foetus and amniotic cavity and delivery problems" and "Diabetes mellitus" (respectively ranked 4th and 7th for both hospitals combined) do not appear among the 10 most frequent for the hospital (respectively ranked 14th and 15th). "Persons encountering the hospital for examination and investigation" and "Heart failure and ill-defined heart disease" are respectively ranked as 8th and 10th at Victoria, but do not emerge among the top 10 causes of hospitalization for both hospitals combined.

At St. Jude "Other maternal disorders related to pregnancy" (ranked 5th) and "Pneumonia" (ranked 8th) are absent on the list of top 10 causes of hospitalization for both hospitals and

respectively ranked 18th and 23rd for St. Jude. "Anaemia" and "Hypertensive disease" are respectively ranked as the 7th and 8th most frequent conditions for hospitalization at St. Jude, but do not appear among the top 10 causes of hospitalization for both hospitals.

Table 8: Discharge diagnoses at public hospitals by age, sex, diagnosis and ICD-10 chapters, 2014

Chapter	ICD-10	Sex	Total	Age Group (in years)						
				<1	1-4	5-14	15-24	25-44	45-64	65+
Total discharges	A00-Z99	M	3,722	773	400	260	214	528	753	794
		F	6,256	646	249	173	1,323	2,254	807	804
Symptoms, signs and ill-defined conditions	R00-R99	M	464	107	117	52	24	41	47	76
		F	448	79	88	30	57	70	58	66
Certain infectious and parasitic diseases	A00-B99	M	121	26	16	7	10	20	19	23
		F	148	24	8	2	9	22	30	53
Neoplasms	C00-D48	M	143	-	-	1	1	15	67	59
		F	331	-	1	-	6	137	132	55
Diseases of blood, blood-forming organs and immune mechanisms	D50-D89	M	79	2	7	13	3	16	16	22
		F	123	1	4	5	21	36	38	18
Endocrine, nutritional and metabolic diseases	E00-E90	M	201	3	3	1	5	20	77	92
		F	164	1	1	1	3	13	70	75
Mental, behavioral disorders	F00-F99	M	31	-	-	1	3	7	16	4
		F	16	-	-	1	5	6	3	1
Diseases of the nervous system	G00-G99	M	65	2	15	2	7	12	11	16
		F	44	-	3	5	2	6	9	19
Diseases of the eye and adnexa	H00-H59	M	21	1	1	10	5	3	1	
		F	13	1	3	3	1	1	3	1
Diseases of the ear and mastoid process	H60-H95	M	7	2	1	-	1	1	2	-
		F	17	3	2	4	2	1	5	-
Diseases of the circulatory system	I00-199	M	347		2	3	6	29	128	179
		F	465	2		2	18	61	128	254
Diseases of the respiratory system	J00-J99	M	469	63	128	70	9	53	67	79
		F	300	30	77	54	19	32	32	56
Diseases of the digestive system	K00-K93	M	394	25	29	30	21	73	123	93
		F	332	13	22	18	26	86	93	74
Diseases of the skin and subcutaneous tissue	L00-L99	M	109	2	9	7	5	28	29	29
		F	93	4	4	5	4	19	28	29
Diseases of musculoskeletal system and connective tissue	M00-M99	M	32	-	1	4	3	4	10	10
		F	59	-	3	2	11	21	17	5
Diseases of genitourinary system	N00-N99	M	204	4	21	17	7	31	56	68
		F	310	2	6	7	61	99	90	45
Pregnancy, childbirth and the puerperium	O00-O99	F	2247	1		10	898	1324	12	2
Certain conditions originating in the perinatal period	P00-P96	M	159	159	-	-	-	-	-	-
		F	117	115	-	1	-	1	-	-
Congenital anomalies	Q00-Q99	M	34	9	13	4	5	2	1	
		F	18	6	2	4	-	4	1	1
Injury, poisoning and consequences of external causes	S00-T98	M	418	4	35	35	90	159	69	26
		F	174	6	21	13	22	40	33	39
External causes of morbidity and mortality	V01-Y98	M	6	-	-	1	4	1	-	-
		F	6	-	-	-	3	3	-	-
Factors influencing health status and contact with health services	Z00-Z99	M	418	364	2	2	5	13	14	18
		F	831	358	4	6	155	272	25	11

Non-Communicable Diseases

Hospitalizations due to Selected Non-Communicable Diseases

Among the selected non-communicable diseases, respectively "Injuries", "Diabetes mellitus" and "Skin problems" are ranked as the 3rd, 7th and 9th most frequent causes of hospitalization in public hospitals. "Neoplasms" and "Heart diseases" were not considered as causes of hospitalization – but if they were, respectively their rankings would be 3rd and 4th.

Hypertension

Females represent about 64% of total discharges due to hypertension and had more hospital discharges than males in all age groups; elderly women (65+ years) were most affected (28% overall and 43% amongst females). Adult (15-44 years) women account for more the 5 times the number of discharges than their male counterparts. Elderly men (20% overall and 56% among males) comprised the 2nd most affected age group.

Diabetes Mellitus

About 60% of all discharges due to diabetes were males and males aged 45-64 years were most affected (28% overall and 47% among males). Females aged 45-64 years and elderly males recorded the second highest number of discharges (23% overall and respectively 39% and 57% amongst males and females).

Table 9: No. of discharges due to selected non-communicable diseases (NCDs) by sex, age group, at public hospitals, NCD and ICD10 code for public hospitals for 2014

Disease	ICD-10	%[2]	Sex	Total	Age Group (in years)						
					<1	1-4	5-14	15-24	25-44	45-64	65+
Hypertension	I10-I15	1.3	**M**	**45**	-	-	-	-	4	16	25
			F	**81**	-	-	1	7	16	22	35
Diabetes	E10-E14	2.3	**M**	**137**	-	-	1	2	16	65	53
			F	**93**	-	-	-	1	6	53	33
Arthritis	M00-M13	0.07	**M**	**6**	-	-	2	-	2	1	1
			F	**1**	-	1	-	-	-	-	-
Skin problems	L00-L99	2.0	**M**	**109**	2	9	7	5	28	29	29
			F	**93**	4	4	5	4	19	28	29
Injuries	S00-T14	4.7	**M**	**356**	2	10	30	83	147	60	24
			F	**116**	4	2	8	18	25	27	32
Heart diseases	I05-I09, I20-I52	3.9	**M**	**164**	-	1	-	5	13	67	78
			F	**223**	2	-	1	6	26	69	119
Mental disorders	F00-F99	0.47	**M**	**31**	-	-	1	3	7	16	4
			F	**16**	-	-	1	5	6	3	1
Neoplasms	C00-D48	4.8	**M**	**143**	-	-	1	1	15	67	59
			F	**331**	-	1	-	6	137	132	55

Source: Medical Records Departments, Victoria and St. Jude Hospitals

[2] This represented the percentage of all discharges

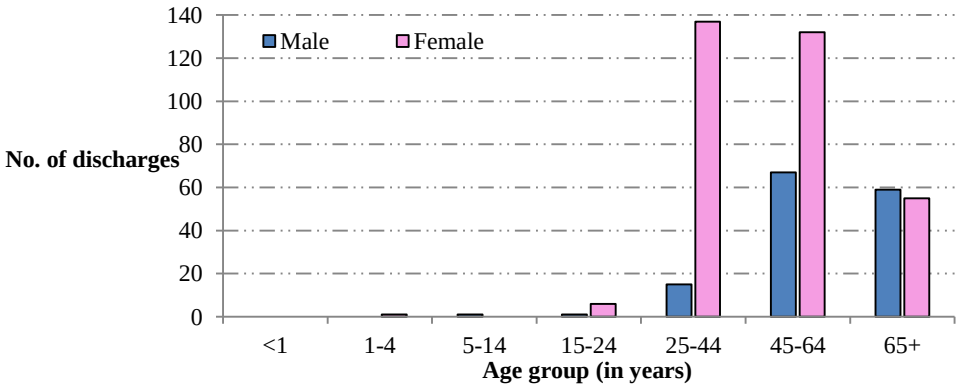
Heart Diseases

More females were hospitalized for heart diseases (58%) and elderly females chronicled the greatest number of discharges (31% overall and 53% among females). Elderly males had the 2nd highest number (20% overall and 48% among males).

Neoplasms

About 70% of hospital discharges due to neoplasms – which include cancers – are females. Women 25-44 years of age are most affected (29% overall and 41% among females), closely trailed by women 45-64 years of age (28% overall and 40% among females). The female-to-male ratio in the 25-44 years age group is slightly greater than 9:1.

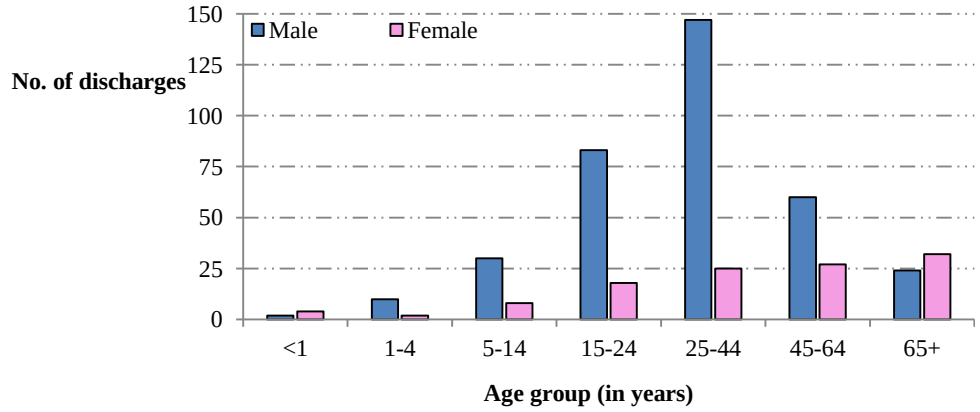
Figure 12: Hospital discharges due to neoplasms by age groups and sex, 2014



Injuries

Males account for 75% of hospital discharges due to injuries and more discharges than females in all age groups except the elderly. Males 25-44 years of age were most affected (31% overall and 41% among males), followed by young males (15-24 years of age) with 18% for both sexes and 23% among males. Amongst adults (15-44 years of age), the number of discharges was greater than five times higher than that of females.

Figure 13: Hospital discharges due to injuries by age groups and sex, 2014



Skin Problems

Hospitalizations due to skin problems are most frequent among persons aged 25 years or older. Although more discharges are recorded for males, the gender gap is roughly similar – especially in the oldest age groups.

Mental Disorders

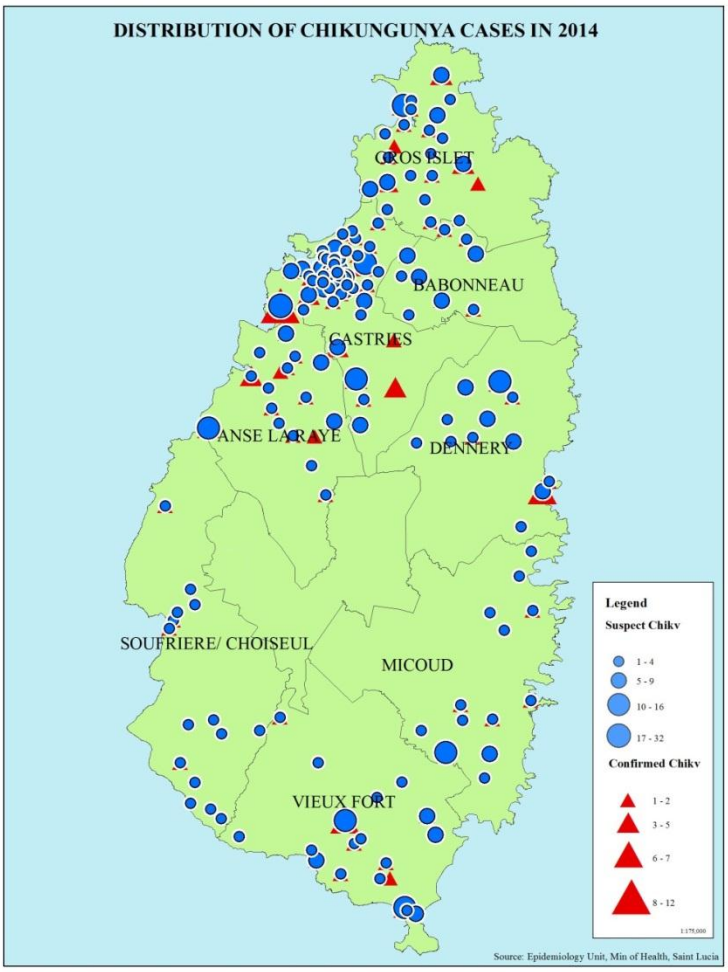
Males represent the majority of hospital discharges for mental disorders (66%) – particularly males 45-64 years (34% overall and 52% among all males).

Communicable Diseases

Chikungunya Epidemic

A total of 884 cases meeting the case definition of the suspected Chikungunya were reported during January 4, 2014 to December 6, 2014. About 21% of cases (188) were laboratory confirmed by the Caribbean Public Health Agency (CARPHA). The epidemic affected all eleven (11) districts of the country. About 80% of cases resided in the North. This was the first time that Chikungunya was detected in the country and hence, there were many immunologically naïve, susceptible persons among the population.

Figure 14: Geographic distribution of reported cases chikungunya, 2014

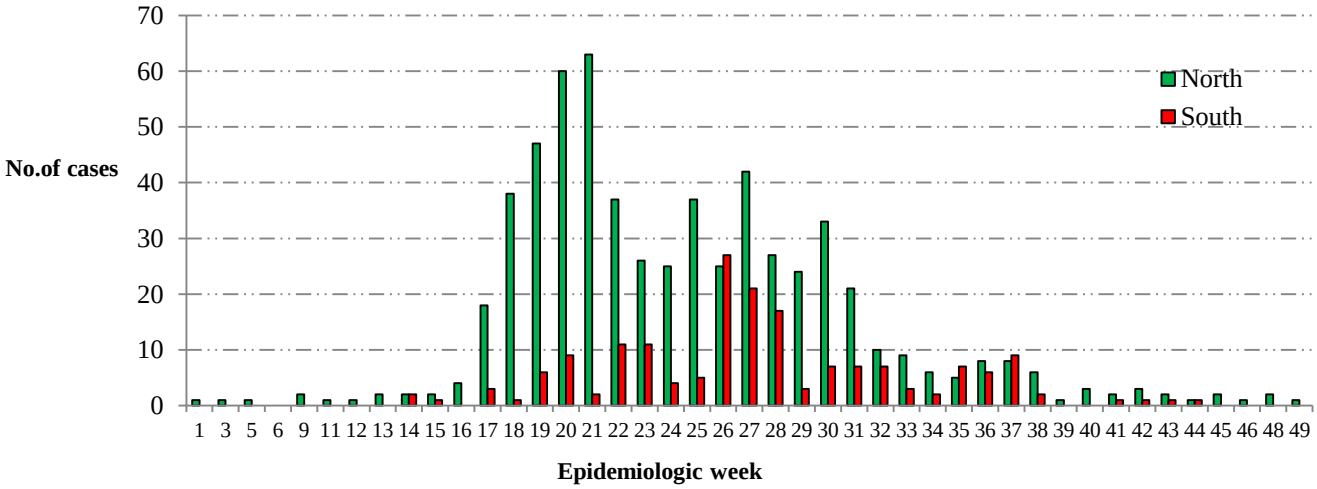


Reported Cases by Region and Epidemiologic Weeks

The shape of both epidemic curves (north and south) represents a propagated spread of the virus with secondary cases infecting new people who, in turn, serve as sources of infection for other cases.

The epidemic started in week 16 of 2014 and waned by week 38 of 2014. In the north, the cases occurred in three (3) main waves (peaks and troughs) – the first being most explosive; in the south, the cases present in five (5) waves with the third affecting the most cases.

Figure 15: Reported cases of Chikungunya by epidemiologic weeks and region for 2014



Reported Cases by District/Region

The majority of suspected cases (38%) were from the district of Castries – which also had the highest attack rate (6.7 per 1,000 population). About 70% of reported cases resided in the north, and attack rates for all northern districts were higher when compared with those of the south, except Vieux Fort – which had the 3rd highest attack rate among districts (*see Table 10*).

Table 10: Reported suspect cases of Chikungunya by region/district, with per cent of total cases and attack rates per 1,000 population, 2014

Region	District	No.	% of Total	Rate
North	Anse La Raye	81	9.2	6.4
	Babonneau	52	5.9	4.1
	Castries	333	38	6.7
	Dennery	67	7.6	5.2
	Gros Islet	89	10	3.4
South	Canaries	3	0.34	1.4
	Choiseul	18	2.0	2.7
	Laborie	15	1.7	1.9
	Micoud	40	4.5	2.5
	Soufriere	10	1.1	1.2
	Vieux Fort	91	10	5.4
All Regions/Districts		**884***	**100***	**5.2**

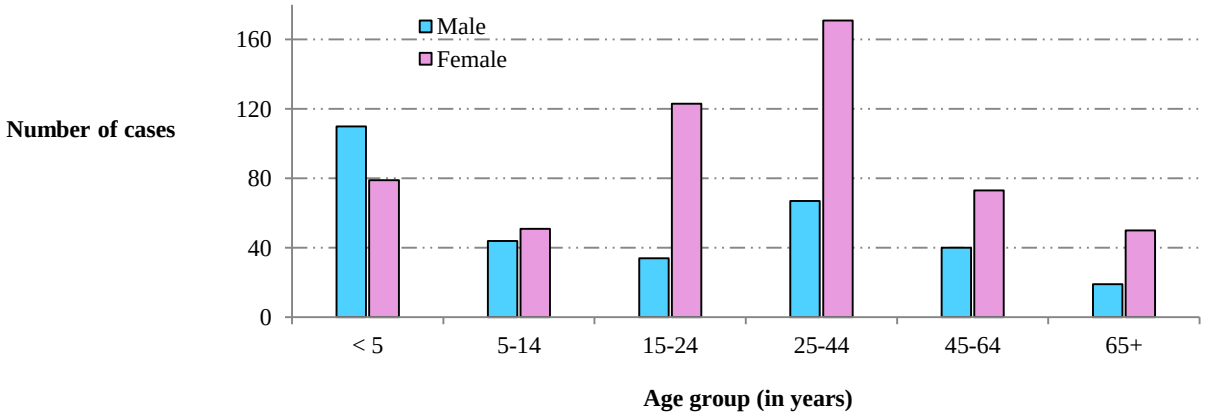
*totals do not match due to omission of 85 suspect cases with region/district not reported
NB: All rates calculated per 1,000 populations

Distribution of Cases by Age and Sex

Persons in the age group 25-44 years were mostly affected and represented about 28% of reported cases. Children <5 years of age accounted for 22% and about 19% were aged 15-24 years (the youth).

More females were affected in all age groups except children <5 years old. The gender gap was widest in the age groups "15-24 years", "25-44 years" and 65+ years (the elderly). These differences should be thoughtfully interpreted within the context of gender differences in health-seeking behaviour, and life expectancy.

Figure 16: Reported cases of Chikungunya by age and sex, 2014.

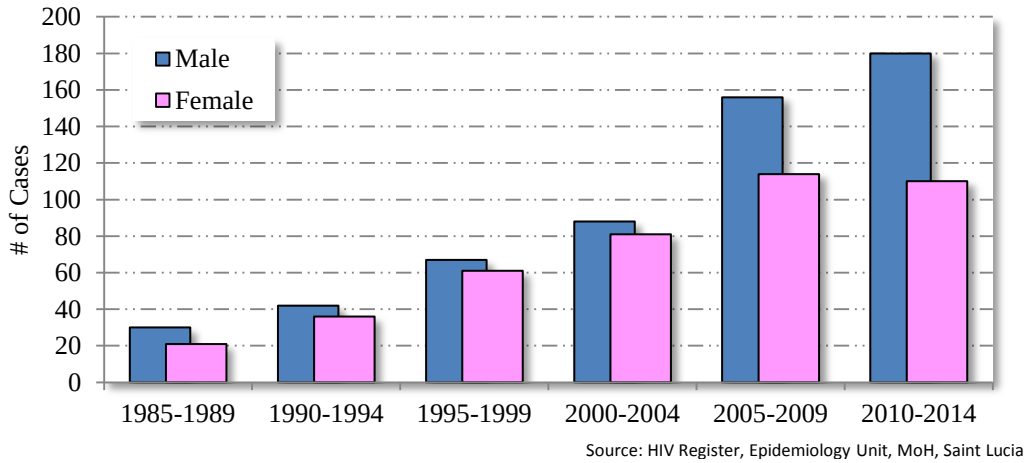


HIV and AIDS

New HIV Infections by Age and Sex

The first case of AIDS was diagnosed and reported in 1985. As at the end of 2014, a cumulative total of 1,043 newly diagnosed cases of HIV infection was recorded.

Figure 17: Newly diagnosed cases of HIV infection by sex and 5-year periods, 1985 to 2014

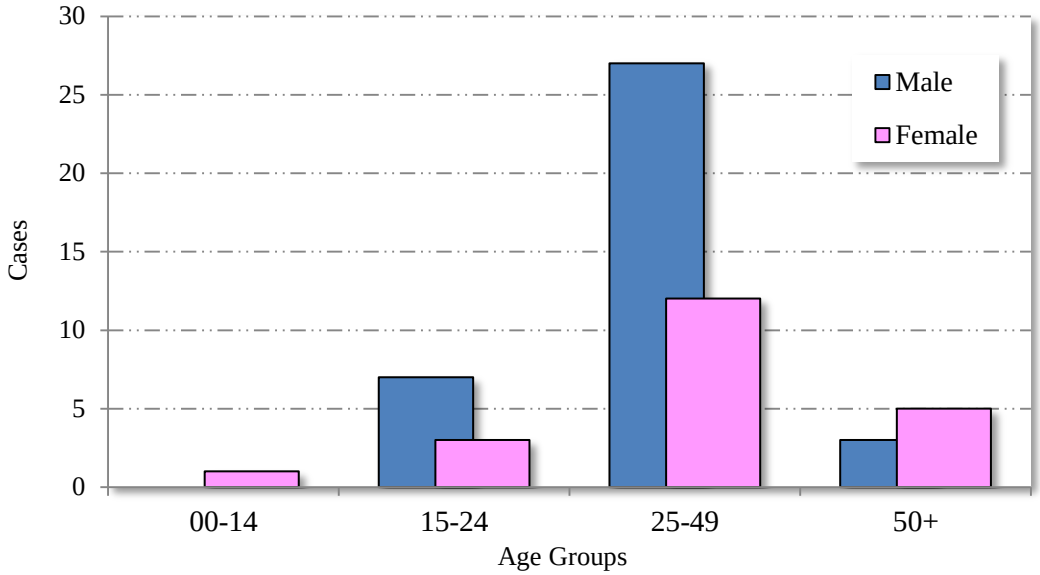


Males comprise the majority of newly diagnosed cases of HIV infection for 2014 in all age groups above 15 years of age.

The 25-49 years age group accounted for 66% of total reported cases, and the number of males reported were almost double that of females.

Regarding the youth (15-24 years), while accounting for only 17% of total cases, there were three (3) newly diagnosed case for females – compared to seven (7) among males.

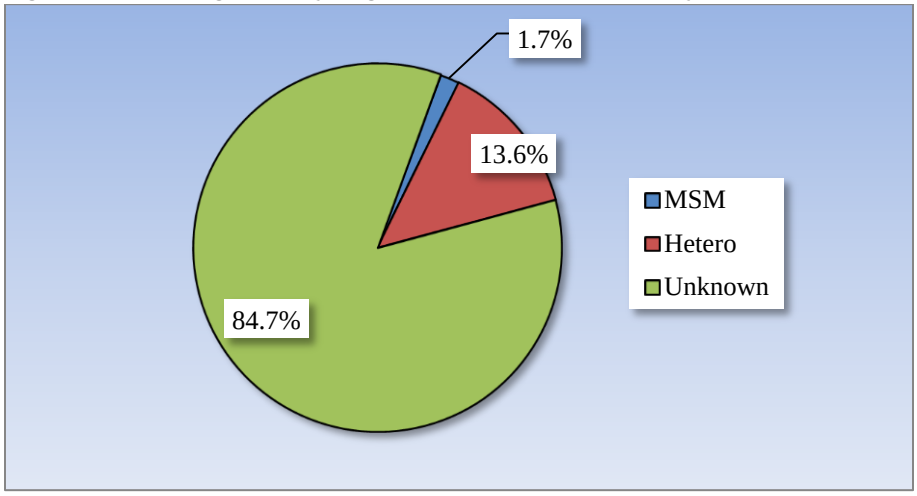
Figure 18: Newly diagnosed cases of HIV infection by age group and gender, 1985 to 2014 (combined)



By Mode of Transmission

Mode of transmission is not reported by 84.7% of newly diagnosed cases; 13.6% reported heterosexual transmission and the residual 1.7% reported MSM.

Figure 19: Percentage of newly diagnosed cases of HIV infection by mode of transmission, 2014.



Syndromic Surveillance

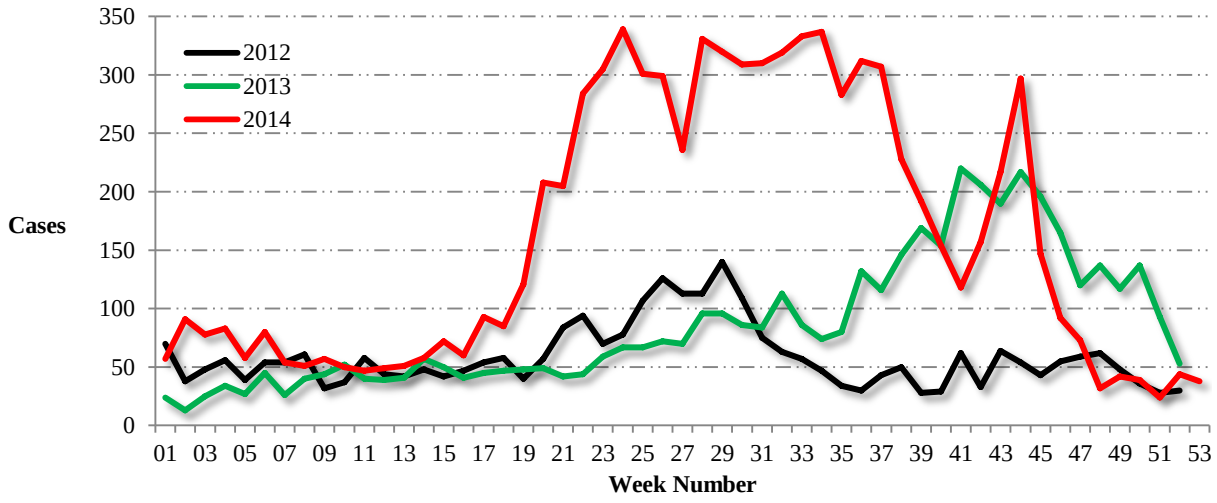
The fundamental objectives of syndromic surveillance are to: 1) Identify illness clusters early, before diagnoses are confirmed; 2) Report promptly to public health agencies to inform mobilization of a rapid response, thereby reducing morbidity and mortality.

The syndromes monitored are Undifferentiated Fever, Fever and Respiratory Syndrome, Fever and Rash and Diarrhoea/Gastroenteritis – which occur more frequently than – Fever and neurological syndromes and Fever and haemorrhagic syndromes. The data sources are 36 primary care facilities and the two (2) government-operated acute general hospitals. Data is submitted every week via telephone and/or completed data collection forms. Data analysis is performed every week by the Epidemiology Unit, and findings are packaged and reported in the Weekly Surveillance Report- which is widely disseminated every week to stakeholders.

Undifferentiated Fever

Increased activity coincides with the period June to November every year – the rainy season. In 2014, increased activity began as early as the 2nd week in May and returned to expected levels by the 3rd week in December, mainly due to the Chikungunya outbreak.

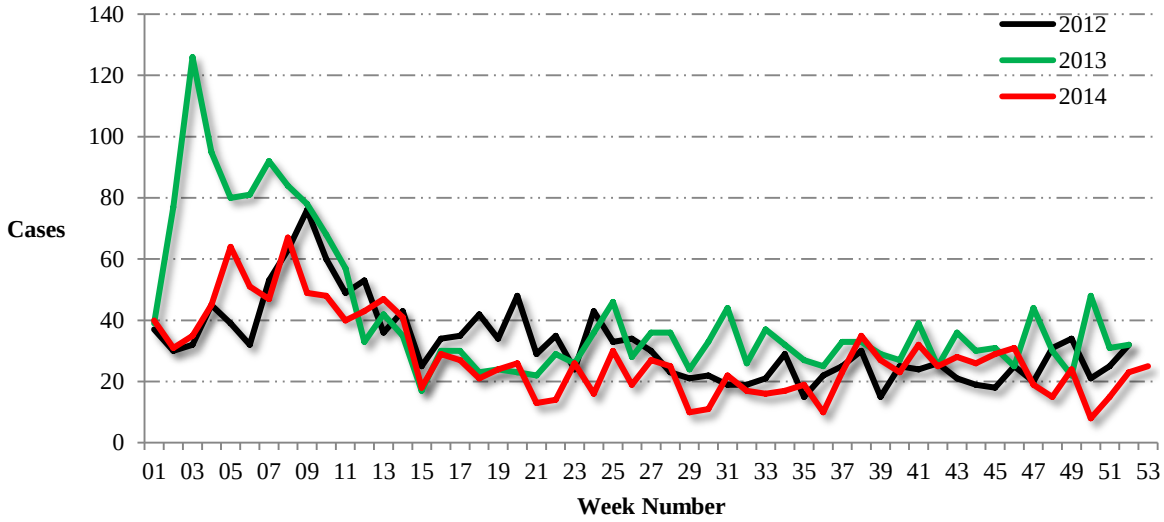
Figure 20: Reported cases of undifferentiated fever by epidemiological weeks and year, 2012 to 2014



Gastroenteritis/Diarrhoea

Increased activity for gastroenteritis had been noted during the first 15 epidemiological weeks of every year.

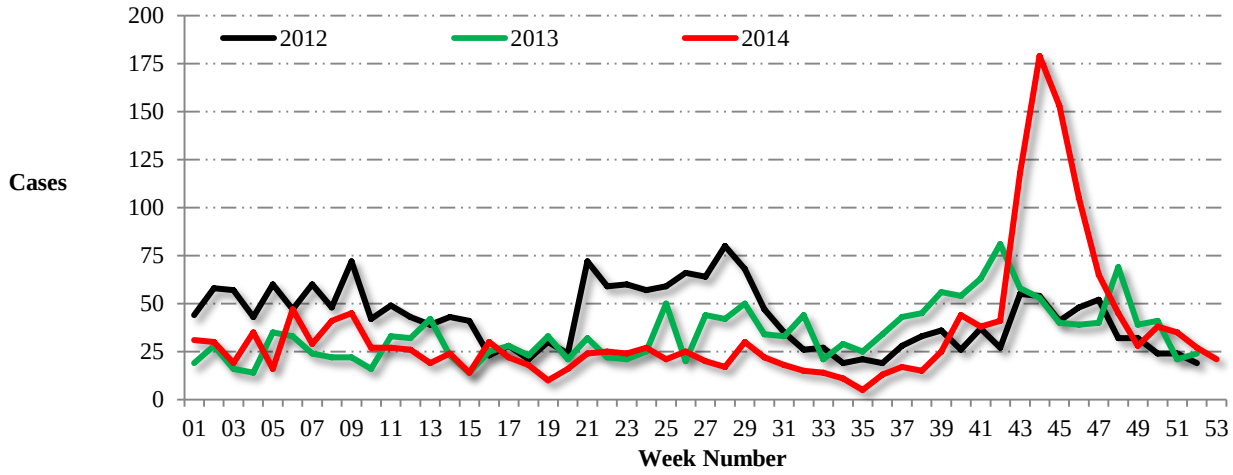
Figure 21: Reported cases of Gastroenteritis by epidemiological weeks and year, 2012 to 2014



Fever and Respiratory Syndromes

Fever and respiratory syndromes occur in three (3) waves of increased activity every year (*see Figure 22*).

Figure 22: Reported cases of Fever and Respiratory Syndromes by epidemiological week and year, 2012 to 2014



The Notification System

The case notification system is an enhanced-passive system based on sharing of data on notifiable communicable diseases from all government-operated health facilities, and monitoring of reporting and data quality on a routine basis by the Epidemiology Services Unit of the Ministry of Health. Suspected and confirmed cases are routinely reported on case notification forms weekly, while cases in suspected outbreaks are reported daily.

Table 11: Reported cases of communicable, notifiable diseases by year, 2012 to 2014

Disease and Category	ICD10 Code	Total for Year		
		2012	2013	2014
Diseases Subject to International Health Regulations				
Cholera	(A00)	-	-	-
Plague	(A20)	-	-	-
Yellow fever	(A95)	-	-	-
Diseases under International Surveillance				
Acquired Immunodeficiency Syndrome (AIDS)	(B20-24)	29	9	2
Malaria	(B50-54)	2	1	1
Influenza	(J10-J11)	40	11	19
Diseases of the Expanded Program of Immunization				
Tuberculosis (Pulmonary)	(A15-16)	-	-	-
Tuberculosis (All other forms)	(A17-19)	-	-	-
Diphtheria	(A36)	-	-	-
Pertussis (Whooping cough)	(A37)	-	-	-
Tetanus (excluding neonatal)	(A34-35)	-	-	-
Tetanus neonatorum	(A33)	-	-	-
Poliomyelitis, acute	(A80)	-	-	-
Measles	(B05)	-	-	-
Mumps	(B26)	-	-	-
Rubella (German measles)	(B06)	-	-	-
Conginital Rubella Syndrome	(B35)	-	-	-
Diseases of the Expanded Program of Immunization				
Dengue Fever	(A90)	35	282	92
*Dengue Hemorrhagic Fever/Shock Syndrome	(A91)	…	6	1
Sexually Transmitted Diseases & Syndromes				
*Syphilis	(A51-53)	…	19	26
Human Immunodeficiency Virus infection	(B20-24)	64	65	53
*Congenital Syphilis	(A50)	…	1	8
Other Diseases of Caribbean Interest				
*Typhoid and Paratyphoid Fevers	(A01)	…	1	-
*Foodborne Illness	(A05-08)	…	5	6
Gastroenteritis in <5 years	(A09)	562	694	476
Gastroenteritis in 5+ years	(A09)	1,114	1,462	1,017
*Viral Hepatitis A (Laboratory confirmed)	(B15)	…	-	-
*Viral Hepatitis B (Laboratory confirmed)	(B16)	…	1	-
Viral Hepatitis (unspecified)	(B17-19)	2	3	-
Rabies (in humans)	(A82)	-	-	-
Leptospirosis	(A27)	11	29	15
Acute Respiratory Infection in <5 years	(J00, 12-22)	1,112	844	970
Other Diseases of National Interest				
Salmonellosis	(A02)	7	-	-
Shigellosis	(A03)	-	-	-
Viral meningitis	(A87)	-	2	-

Source: 1) Epidemiology Services Unit, Ministry of Health; 2) Medical records reports, St. Jude and Victoria hospitals

… means data not available

*From hospital discharge data

Diseases under Expanded Program of Immunization (EPI)

Except for Tuberculosis, there were no reported cases of diseases under the EPI for 2012 through 2014. Respectively, there were three (3) cases and one (1) case of confirmed tuberculosis reported for 2013 and 2014.

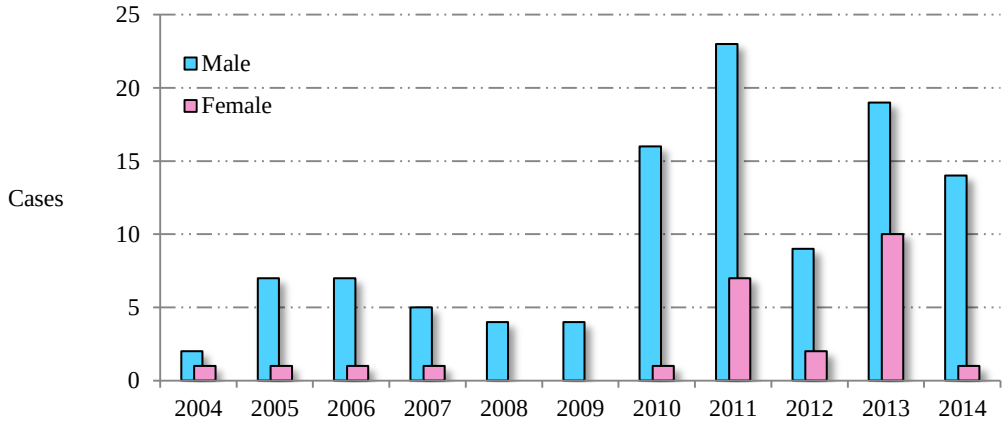
For 2014, about 98% of target population of infants were given DPT (Diphtheria, Pertussis, Tetanus), and OPV (Oral Polio Vaccine) vaccinations, and 83% given BCG (Bacillus Calmatte-Guérin, Tuberculosis).

Zoonoses

Leptospirosis mainly affects males, especially adult males in the productive age group (15-44 years), which accounted for about 57% of all reported confirmed cases on register for 2004 to 2014.

Significantly more cases have been reported from 2010 to 2014, compared with 2004 to 2009.

Figure 23: Reported cases of confirmed leptospirosis by sex and year, 2004 to 2014



Non-Communicable Diseases

Regarding hospital discharges due to non-communicable diseases for 2014 and the age groups and gender primarily affected:

- Cancers and diabetes: males and females aged 45 years or older with higher percentages for males compared with their female counterparts;
- Mental disorders: males 45-64 and adult males (15-44 years);
- Heart diseases: males and females 45 years or older; similarly for males and females 45-64 years but more significantly for females 65 years or older (15%);
- Hypertension: males and females 45 years or older; higher percentages for females in both age groups;

- Cerebrovascular diseases: males and females 45 years or older; higher percentages for 65 years or older but highest for females;
- Skin problems : primarily males 15 years or older, but also females 45 years or older;
- Injuries: mainly males 15-44 years (30%) and males 45-64 years; elderly females also a cause for concern

Age & Gender Distribution of Non-Communicable Diseases

Table 12: No. of hospital discharges by CNCD and year, 2014

Disease/Problem	Sex	Age Groups									
		All Ages		00-14		15-44		45-64		65+	
		No.	%	No.	%	No.	%	No.	%	No.	%
Total	Male	3,722	100	1,433	100	742	100	753	100	794	100
	Female	6,256	100	1,068	100	3,577	100	807	100	804	100
Malignant neoplasms	Male	122	3.3	1	0.07	9	1.2	57	7.6	55	6.9
	Female	110	1.8	1	0.09	23	0.64	49	6.1	37	4.6
Diabetes mellitus	Male	137	3.7	1	0.07	18	2.4	65	8.6	53	6.7
	Female	93	1.5	-	-	7	0.20	53	6.6	33	4.1
Mental disorders	Male	31	0.83	1	0.07	10	1.3	16	2.1	4	0.50
	Female	16	0.26	1	0.09	11	0.31	3	0.37	1	0.12
Heart diseases	Male	164	4.4	1	0.07	18	2.4	67	8.9	78	9.8
	Female	223	3.6	3	0.28	32	0.89	69	8.6	119	15
Hypertension	Male	45	1.2	-	-	4	0.54	16	2.1	25	3.1
	Female	81	1.3	1	0.09	23	0.64	22	2.7	35	4.4
Cerebrovascular diseases	Male	80	2.1	-	-	4	0.54	24	3.2	52	6.5
	Female	99	1.6	-	-	8	0.22	26	3.2	65	8.1
Skin problems	Male	109	2.9	18	1.3	33	4.4	29	3.9	29	3.7
	Female	93	1.5	13	1.2	23	0.64	28	3.5	29	3.6
Arthritis	Male	6	0.16	2	0.14	2	0.27	1	0.13	1	0.13
	Female	1	0.02	1	0.09	-	-	-	-	-	-
Injuries	Male	356	9.6	42	2.9	230	31	60	8.0	24	3.0
	Female	116	1.9	14	1.3	43	1.2	27	3.3	32	4.0

Risk Factors

This section provides an overview of 7 selected risk factors: tobacco use and exposure, alcohol consumption, diet (consumption of less than 5 daily servings of fruits and vegetables), physical activity, overweight and obesity, raised blood pressure, impaired or raised blood glucose levels, and hypertension medication adherence, from the Saint Lucia STEPS survey, 2012 (*see Table 13*).

Table 13: Selected risk factors for NCDs by sex, among 1,834 respondents aged 25-64 years, 2012

NCD Risk Factor	Both	Male	Female
Tobacco use and exposure			
Currently smoke tobacco	14.5	25.3	4.0
Smoke tobacco daily	9.3	16.2	2.5
Exposed to smoke for ≥ 1 day per week at home	16.9	20.3	13.7
Exposed to smoke for ≥ 1 day per week at work	18.3	23.6	13.0
Alcohol consumption			
Drank in past 30 days	59.3	74.3	44.7
Heavy episodic drinking in past 30 days	…	49.5	19.5
Diet			
Ate < 5 servings of fruit and vegetables per day	88.3	86.9	89.7
Physical activity			
Low levels	29.7	18.9	40.2
High levels	48.2	64.8	32.0
Other NCD risk factors			
Average Body Mass Index (BMI)	28.0	26.0	30.0
Overweight and obese (BMI ≥ 25 kg/m²)	65.6	53.9	77.1
Obese (BMI ≥ 30 kg/m²)	31.9	17.1	46.4
Raised blood pressure	27.3	28.0	26.7
Raised blood pressure and on medication	18.3	23.4	12.7
Impaired or raised fasting blood glucose (≥ 100 mg/dl)	42.2	37.1	46.2

Overweight and obesity

Obesity and overweight is a common risk factor for a range of conditions, including ischaemic heart disease (IHD), hypertension, some cancers and non-insulin dependent diabetes mellitus. There is evidence from a range of surveys that overweight and obesity states are increasing in Saint Lucia. Based on the Saint Lucia Steps Survey, 2012, it was estimated that of the population surveyed 65.6% were overweight and obese, with highest prevalence among women (*see Table 13*). Obesity prevalence was more than two times higher among women compared to men.

Hypertension

Hypertension is an important physiological risk factor for cardiovascular disease and is associated with other risk factors, including obesity, diabetes and high cholesterol. It accounted for 33% of the mortality burden in Saint Lucia in 2012, the highest proportion of burden attributable to a risk factor. From the survey, the prevalence of raised blood pressure for males who were currently on medication was 28% and 26.7% for females. Among males and females who were not on medication for raised blood pressure, the prevalence was 23.4% and 12.7% respectively.

2.2 Mortality

Ten Leading Causes of Death

Cancers, heart disease and stroke respectively are the top 3 major killers for 2014; diabetes mellitus and hypertension are respectively ranked 4th and 5th. The top five for 2014 are ranked exactly as that of 2013.

Chronic lower respiratory diseases emerged in 6th place, climbing up 2 notches from 2013.

Assault (homicide) is the 7th leading cause of death and chronic liver disease and cirrhosis is ranked 8th.

Communicable diseases are no longer among the top 5 causes of death; however, influenza and pneumonia, and perinatal conditions still persist among the top 10 causes of death, each claiming the lives of 26 Saint Lucians in 2014. Perinatal conditions are the main contributors to infant mortality.

The top 10 leading causes of death accounted for about 70% of the total deaths, or about 5 out of every 1,000 persons in Saint Lucia for 2014.

Table 14: The 10 leading causes of death by rank, with per cent of total deaths and rates per 1,000 population, 2013 and 2014

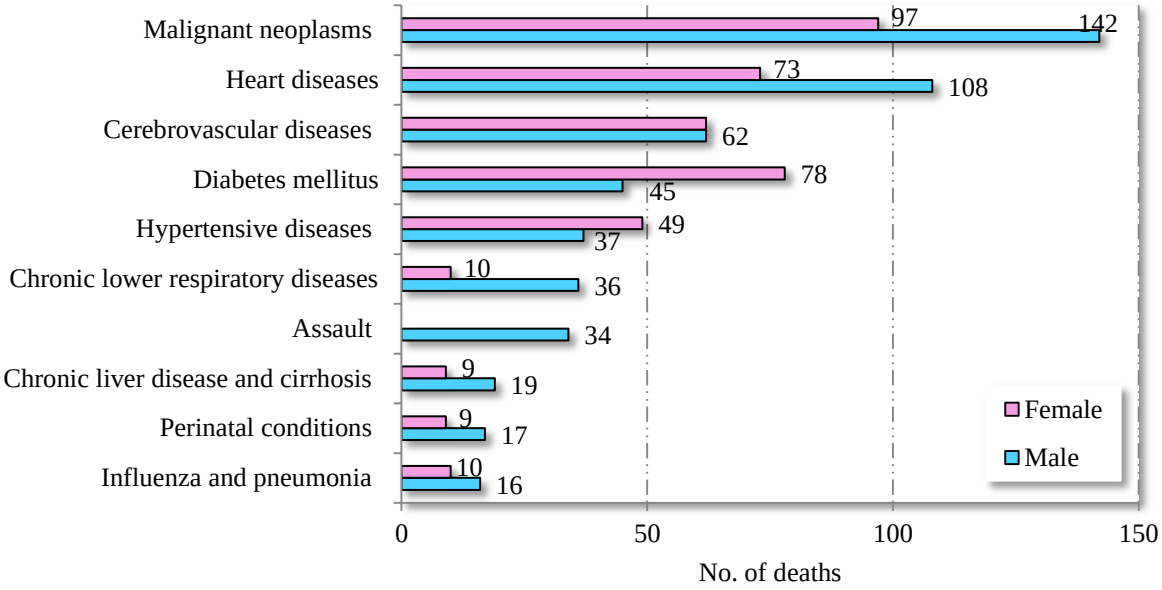
Causes of Death	ICD 10 Code	2014			2013		
		Rank	No.	Rate	Rank	No.	Rate
Malignant neoplasms	C00-C97	1	239	1.4	1	185	1.1
Heart diseases	I05-I09;I20-I52	2	181	1.1	2	164	0.96
Cerebrovascular diseases	I60-I69	3	124	0.72	3	143	0.84
Diabetes mellitus	E10-E14	4	123	0.71	4	74	0.43
Hypertensive diseases	I10-I15	5	86	0.50	5	70	0.41
Chronic lower respiratory diseases	J40-J47	6	46	0.27	8	25	0.15
Assault	X85-Y09	7	34	0.20	6	33	0.19
Chronic liver disease and cirrhosis	K70-K74	8	28	0.16	10	19	0.11
Influenza and pneumonia	J09-J18	9	26	0.15	11	14	0.08
Perinatal conditions	P00-P96	9	26	0.15	9	21	0.12

Top 10 Leading Causes by Sex

In 2014, markedly more males succumbed to the top 10 leading causes for every cause except cerebrovascular diseases, diabetes mellitus and hypertension. More women died from diabetes and hypertension, while for cerebrovascular diseases the number of deaths was equal for both sexes.

All deaths by homicide were males.

Figure 24: The top 10 leading causes of death by sex for 2014



Ten Leading Causes of Death by YPLL

The years of potential life lost (YPLL) estimates the number of life years lost to premature deaths. Similar to life expectancy, YPLL is a good measure of overall health.

Perinatal causes comprise the leading cause of premature death for 2014 and the 2nd leading cause for 2013. Assault is ranked 2nd and cancers 3rd. The top 3 leading causes of premature deaths are the same for 2013 and 2014.

Heart diseases and land transport accidents are respectively ranked 4th and 5th, each switching their positions for 2013.

Suicide, congenital anomalies and chronic liver disease and cirrhosis held their same positions at correspondingly 6th, 7th and 8th for both years.

Diabetes mellitus was ranked 13th in 2013 but climbed to 9th place in 2014, while chronic lower respiratory diseases fell to 10th from 9th in 2013.

Table 15: The 10 leading causes of premature death by rank and YPLL, for 2013 and 2014

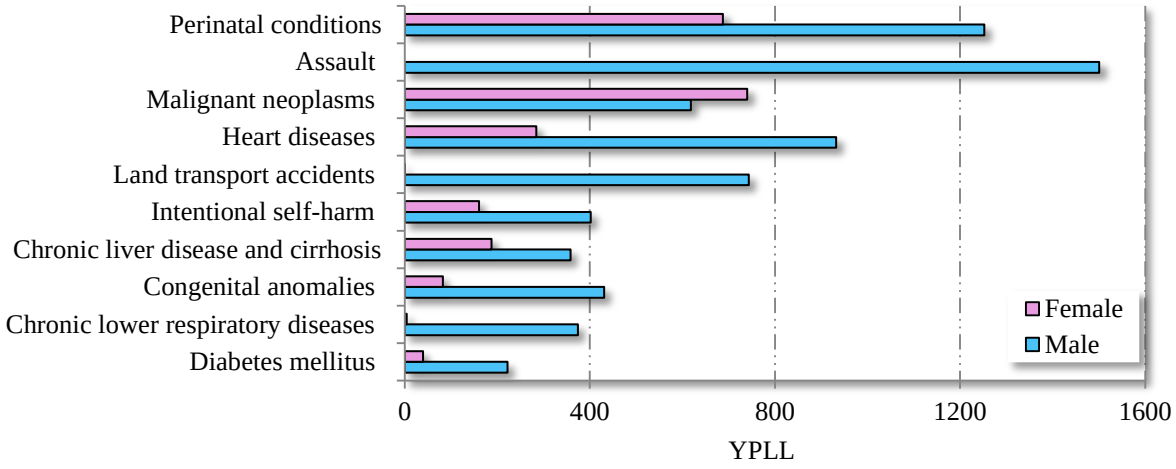
Causes of Death	2014		2013	
	Rank	YPLL	Rank	YPLL
Perinatal conditions (P00-P96)	1	1841	2	1596
Assault (X85-Y09)	2	1216	3	1328
Malignant neoplasms (C00-C97)	3	872	1	2205
Heart diseases (I05-I09; I20-I52)	4	714	5	770
Land transport accidents (V01-V89)	5	577	4	1055
Intentional self-harm (X60-X84)	6	460	6	467
Congenital anomalies (Q00-Q99)	7	458	7	429
Chronic liver disease and cirrhosis (K70-K74)	8	408	8	374
Diabetes mellitus (E10-E14)	9	240	13	85
Chronic lower respiratory diseases (J40-J47)	10	223	9	237

Top 10 Leading Causes by YPLL and Sex

The gender gap is even more significant when the 10 leading causes of premature deaths by sex are considered. Males lost strikingly more potential years of life than females for all causes, particularly assault, land transport accidents and chronic lower respiratory diseases.

Women lost more potential years of life to cancers than males.

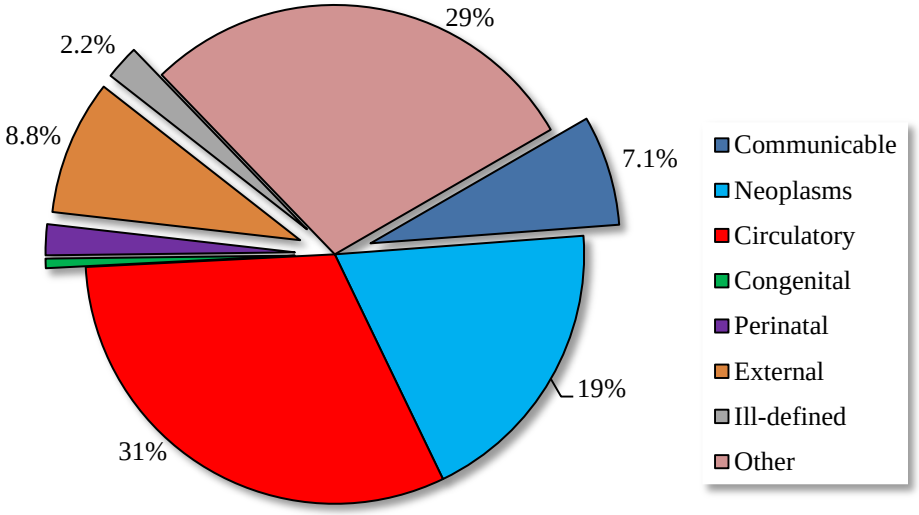
Figure 25: The top 10 leading causes of death by YPLL and sex for 2014



Selected Broad Causes of Death

The percentage of deaths assigned to ill-defined causes is a measure of the quality of mortality data, and less than 10% is generally deemed as good quality. Only 2.2% of deaths were due to ill-defined causes in 2014 (ICD-10 R codes). Circulatory disorders and neoplasms together account for half of all deaths.

Figure 26: Percentage of deaths due to selected broad causes by cause, 2014



Age & Gender Distribution of Selected Causes of Death

Among males "External causes of death" is the leading cause of premature death (YPLL = 3,445 person-years). Males lose more potential life years than females for every selected broad group of causes except "Neoplasms" and "ill-defined causes".

"Neoplasms" is the leading cause of premature deaths among females (774 person-years).

Table 16: Selected causes of death by age, gender and YPLL, 2014

Broad Cause Groups (ICD 10)	Sex	Total	Age Groups in Years							YPLL
			< 1	1-4	5-14	15-24	25-44	45-64	65+	
Total deaths	M	730	23	1	5	17	76	200	406	9,453
	F	572	11	-	1	4	45	96	411	2,715
Total Deaths from Defined Causes	M	720	23	1	5	17	76	199	397	9,510
	F	553	10	-	1	4	44	96	394	2,823
1: Communicable Diseases (A00-B99; J00-J22)	M	52	2	1	-	1	5	9	33	521
	F	41	-	-	-	-	4	4	33	11
2: Neoplasms (C00-D48)	M	146	-	-	1	-	4	37	103	627
	F	102	-	-	-	-	5	34	61	774
3: Circulatory Disorders (I00-I99)	M	214	-	-	2	2	7	55	148	1,224
	F	194	-	-	-	2	9	30	153	291
4: Congenital causes (Q00-Q99)	M	7	5	-	-	-	-	2	-	431
	F	1	1	-	-	-	-	-	-	82
5: Perinatal Causes (P00-P96)	M	17	16	-	-	-	-	1	-	1,252
	F	9	9	-	-	-	-	-	-	688
6: External Causes (V01-Y98)	M	96	-	-	-	12	44	27	13	3,445
	F	18	-	-	-	1	5	2	10	254
7: Ill-defined Causes (R00-R99)	M	10	-	-	-	-	-	1	9	(57)
	F	19	1	-	-	-	1	-	17	(108)
8: Other Causes (Rest of ICD 10)	M	188	-	-	2	2	16	68	100	2,009
	F	188	-	-	1	1	21	26	137	723

Proportional Mortality due to Selected Causes

Males account for more deaths in all ages except among the elderly (65 years or older) where females accounted for a slight majority. The greatest gender gap – as measured by the Male-to Female ratio was 6:1 for the age group "1-14 years" followed by "15-24 years" with about 4 males for every female.

Homicides accounted for only 2.6% of all deaths for 2014, but 29% of deaths among the youth (15-24 years) and 17% among 25-44 year olds. In addition, all deaths due to homicides were males.

Table 17: Number of deaths & proportional mortality due to selected diseases by age and gender

Cause of Death	Sex	Age Group (in years)													
		All Ages		<1		1-14		15-24		25-44		45-64		65+	
		No.	*%*	No.	*%*	No.	*%*	No.	*%*	No.	*%*	No.	*%*	No.	*%*
All Causes	M	730	*56*	23	*68*	6	*86*	17	*81*	76	*63*	200	*68*	406	*50*
	F	572	*44*	11	*32*	1	*14*	4	*19*	45	*37*	96	*32*	411	*50*
Hypertension	M	37	*2.8*	-	-	-	-	-	-	-	-	14	*4.7*	23	*2.8*
	F	49	*3.8*	-	-	-	-	-	-	3	*2.5*	10	*3.4*	36	*4.4*
Diabetes	M	45	*3.5*	-	-	-	-	-	-	1	*0.83*	14	*4.7*	30	*3.7*
	F	78	*6.0*	-	-	-	-	-	-	2	*1.7*	11	*3.7*	63	*7.7*
Heart diseases	M	108	*8.3*	-	-	1	*14*	2	*9.5*	7	*5.8*	28	*9.5*	70	*8.6*
	F	73	*5.6*	-	-	-	-	2	*9.5*	4	*3.3*	11	*3.7*	56	*6.9*
Cerebrovascular disease	M	62	*4.8*	-	-	1	*14*	-	-	-	-	12	*4.1*	49	*6.0*
	F	62	*4.8*	-	-	-	-	-	-	1	*0.83*	8	*2.7*	53	*6.5*
Malignant neoplasms	M	142	*11*	-	-	1	*14*	-	-	4	*3.3*	36	*12*	100	*12*
	F	97	*7.5*	-	-	-	-	-	-	5	*4.1*	32	*11*	58	*7.1*
Suicides	M	11	*0.84*	-	-	-	-	1	*4.8*	5	*4.1*	4	*1.4*	1	*0.12*
	F	3	*0.23*	-	-	-	-	1	*4.8*	2	*1.7*	-	-	-	-
Homicides	M	34	*2.6*	-	-	-	-	6	*29*	20	*17*	7	*2.4*	1	*0.12*
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Land Transport Accidents	M	21	*1.6*	-	-	-	-	3	*14*	9	*7.4*	6	*2.0*	3	*0.37*
	F	1	*0.08*	-	-	-	-	-	-	-	-	-	-	1	*0.12*

Malignant Neoplasms (Cancers)

Cancer is the leading cause of death in Saint Lucia for 2014. It is caused by both external and internal factors, which may act together or in sequence to initiate or promote the development of cancer. Ten (10) or more years often pass between exposure and detectable cancer.

A substantial proportion of cancers can be prevented through avoidance of risk factors such as cigarette smoking and heavy use of alcohol. Regular screening tests that allow for early detection and removal of precancerous growth can prevent cancers of the breast, cervix, colon and rectum.

Top 5 Leading Sites for Cancer Deaths for Males and Females

About one-third of all males who succumbed to cancer in 2014 died from prostatic cancer – the leading site for cancers among males (*see Table 18)*. Other specified sites in the top 5 for males include "bronchus & lung" "stomach" and "colon" respectively ranked 3rd, 4th and 5th. The primary site was not specified for about 11% of all male cancer deaths. The top 5 leading sites together accounted for 62% of all cancer deaths among males.

The breast was the leading site for cancer deaths among females with 14% of all female cancer deaths. Other specified sites were "colon", "cervix" and "stomach" – respectively ranked 2nd, 4th and 5th. Primary site was not stated for about 8% of all female cancer deaths. The top 5 leading sites together accounted for about 53% of all cancer deaths among females.

The stomach and colon are among the top 5 leading sites for both sexes, as well as unspecified sites.

Table 18: Top 5 leading sites for cancer deaths among males and females, 2014

Rank	Male (N = 142)			Female (N = 97)		
	Site	No.	%	Site	No.	%
1	Prostate	42	*30*	Breast	14	*14*
2	Unspecified	15	*11*	Colon	12	*12*
3	Bronchus & Lung	12	*8.5*	Cervix Uteri	10	*10*
4	Stomach	11	*7.7*	Unspecified	8	*8.2*
5	Colon	8	*5.6*	Stomach	7	*7.2*
Total 5 leading sites		**88**	***62***		**51**	***53***

2.3 Population Sub-groups

Infants (<1 Year)

EPI Coverage

The Expanded Program on Immunization (EPI) of Saint Lucia seeks to vaccinate all infants against the diseases covered under the program. The vaccines given to infants (and diseases that they protect against) under the EPI program are as follows:

- Polio (Poliomyelitis)
- DPT/Hep B/HIB (Diphtheria, Whooping cough, Tetanus, Hepatitis B, Haemophilus Influenza type B); and
- BCG (Tuberculosis)

The target population for immunization of infants for a given year is calculated by subtracting the number of infant deaths from total live births for the particular year. The figure was 1,992 for 2014. Infants are considered to have completed immunization when they receive three (3) doses of Polio and DPT/Hep B/HIB vaccines and only dose for BCG. About 98% of infants completed immunization for Polio and DPT/Hep B/HIB, and 83% received the BCG vaccine.

Table 19: Number and per cent of infants who completed immunizations by vaccine, for 2014

Vaccine	Number Completed	% of Target
Polio	1953	98
DPT/Hep B/HIB	1953	98
BCG	1662	83

Source: 1) Community Nursing Service Reports; 2) Births Register, Epidemiology Services Department

Leading Causes of Discharge

The leading cause of hospitalization for infants was due to "reproduction circumstances" which includes live births – these accounted for 52% of total discharges and just over 700 out of every 1,000 infants admitted in hospital. The 2nd, 3rd and 4th leading causes are perinatal conditions which together accounted for about 17% of all infant discharges in hospital.

Table 20: Top five (5) leading causes of discharge among infants for 2014

Cause of Hospitalization	ICD Code	Rank	Number	% of Total	Rate*
Reproduction circumstances	Z30-Z39	1	1,420	52	701
Disorders related to length of gestation and fetal growth	P05-P08	2	177	6.5	87
Bleeding and blood disorders of fetus and newborn	P50-P61	3	144	5.3	71
Perinatal respiratory and cardiovascular disorders	P20-P29	4	136	5.0	67
Pneumonia	J12-J18	5	104	3.8	51
Total Top 5 Principal Causes			1,981	73	978

*Rates calculated per 1,000 live births

Source: *Medical Records, Victoria and St. Jude hospitals*

Pneumonia is the 5th leading cause of discharge among infants representing just below 4% of all discharges among infants and affecting 50 per 1,000 infants.

The top 5 causes of discharge accounted for about 73% of all discharges among infants, and 978 out of every 1,000 live births.

About 7.9% of discharges among infants were due to "Ill-defined" conditions – which is not considered as a cause of hospitalization but would be ranked 2nd if considered.

Acute Respiratory Infections (ARI)

About 39 out of every 1,000 infants were hospitalized for Acute Respiratory Infections (ARI) in 2014 – compared with 47 per 1,000 for the previous year. Among the ARIs, pneumonia accounts for the highest number of hospitalized cases for infants.

Table 21: No. of hospitalizations due to ARI by disease, with rates per 1,000 live births for 2013 and 2014

Acute Respiratory Infection (ARI)	ICD Code	2013		2014	
		No.	Rate*	No.	Rate*
Acute upper respiratory infections	J00-J06	11	5.7	28	14
Pneumonia	J12-J18	67	34	37	18
Acute bronchitis and bronchiolitis	J20-J21	13	6.7	12	5.9
Unspecified acute lower respiratory infection	J22	1	0.51	2	0.99
Total Acute Respiratory Infections (ARI)		92	47	79	39

*Rates calculated per 1,000 live births
Source: *Medical Records, Victoria and St. Jude hospitals*

Perinatal Conditions and Congenital Anomalies

Perinatal conditions and congenital anomalies are significant contributors to severe illness and death among infants in Saint Lucia every year. Perinatal conditions persist as the leading cause of death and appear among the top five causes of hospitalization for 2013 and 2014. Congenital anomalies do not appear among the leading causes of hospitalization, but continue to be the 2nd leading cause of infant deaths.

Table 22: Hospitalized cases and deaths due to perinatal conditions and congenital anomalies, with rates per 1000 live births, by year, for 2013 and 2014

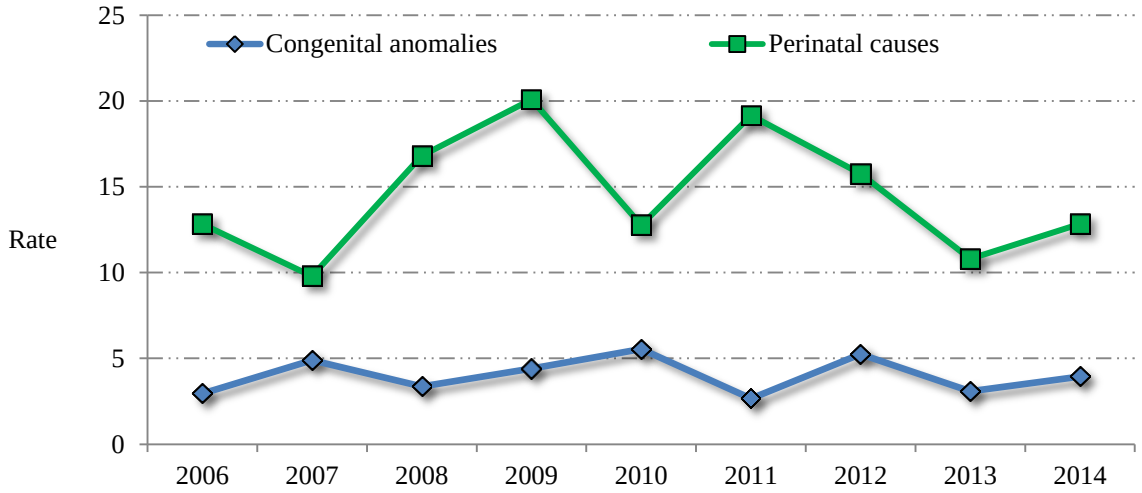
Disease/Condition	**ICD Code**	**Type**	**2013**		**2014**	
			No.	**Rate**	**No.**	**Rate**
Perinatal conditions	P00-P96	Cases	319	164	274	135
		Deaths	21	11	26	13
Congenital anomalies	Q00-Q99	Cases	12	6.2	15	7.4
		Deaths	6	3.1	8	3.9

Source: *Epidemiology Services Department, Ministry of Health*

Trends in mortality rates from these two conditions from 2006 through 2014 show that congenital anomalies cluster around 5 deaths per 1,000 infants. Perinatal conditions ranged

between 10 and 20 deaths per 1,000 infants with three (3) troughs and two (2) main peaks. In 2014 the rate increased from its second lowest reported for the period.

Figure 27: Trends in mortality rates (per 1,000 live births) due to perinatal causes and congenital anomalies by year for 2006 to 2014

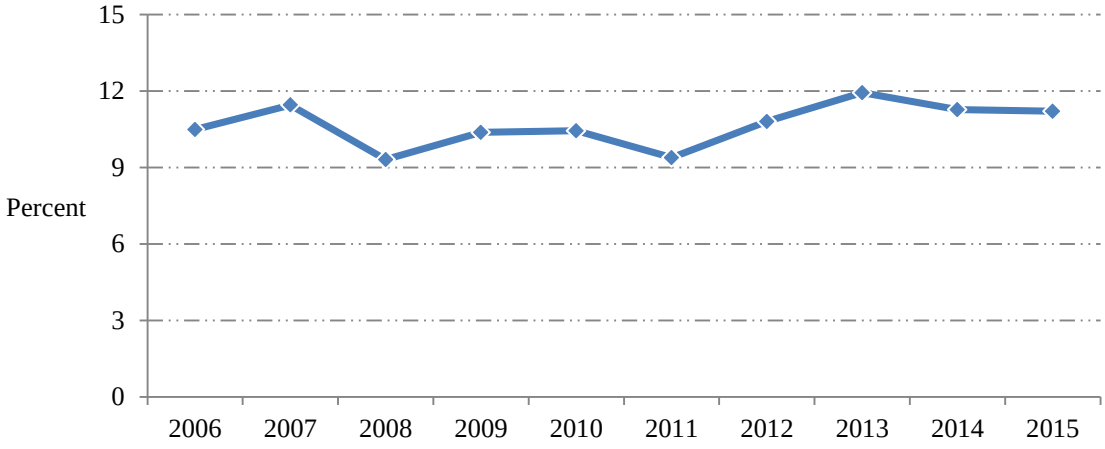


Low Birth Weight Babies

A low birth weight (LBW) baby is born with weight less than 5.5 pounds (or 2,500 grams). About one (1) in every nine (9) babies born in Saint Lucia is born with low birth weight. Some low birth weight babies are healthy, even though they are small, but being low birth weight can cause serious health problems for some babies, and can become a risk factor for CNCDs later in life.

Eleven (11) out of every 100 babies born in 2013 and 2014 were low birth weight babies. Over the past ten (10) years, the percentage of low birth weight ranged between 9% and 12%.

Figure 28: Trends in incidence of low birth weight by year for 2005 to 2014

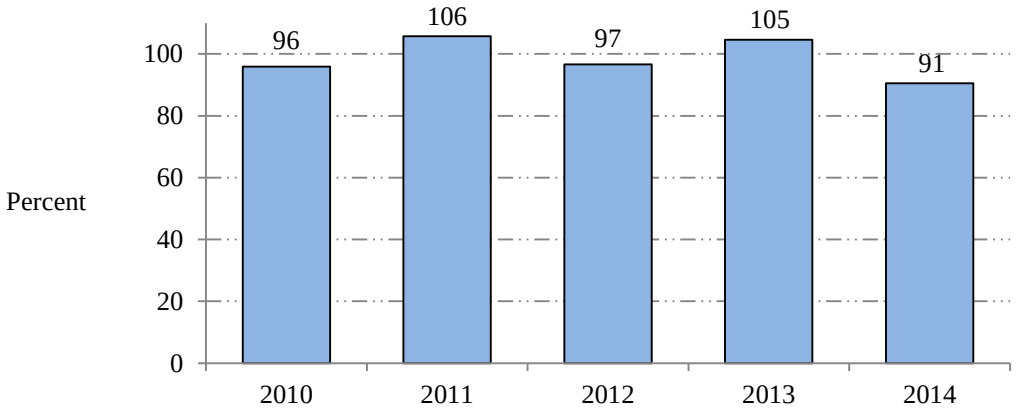


Children (1-4 years)

Measles Coverage

The Mumps, Measles and Rubella (MMR) vaccine is routinely given to one-year old children at government primary care facilities and in the private sector. During 2010 to 2014, between 91% and 106% of children were immunized. (It is possible to exceed the 100% mark in a particular year if the coverage was less than 100% in previous years). Although the lowest coverage for the past 5 years was achieved in 2014, the figure is still high by regional standards.

Figure 29: Mumps, Measles and Rubella (MMR) vaccine coverage by year for 2010 to 2014



Child Health Service Utilization

Child health clinics are held routinely at primary care facilities, targeting children up to five (5) years of age. Services provided to children include:

- Standard assessments at 2 months, 8 months, 18 months, 3 years and 5 years of age;
- Immunization against diseases under the Expanded Program of Immunization (EPI);
- Health education including workshops and demonstrations.

The total number of child health clinics held ranged from 1,748 to 2,025 – the highest number held in 2014. The highest number of new registrants (782) was also seen in 2014 (*see Table 23*).

The percentage of mothers who exclusively breast feed (breastfeeding only at 6 months) has been below 20% for 2010 through 2014. About 12% of mothers reported exclusive breastfeeding at child health clinics for 2014 – the 2nd lowest for the past 5 years.

Table 23: Selected child health clinic utilization statistics, 2010 to 2014

Indicator	2010	2011	2012	2013	2014
No. of clinics held	1,864	1,871	1,748	1,824	2,025
No. of infants exclusively breast fed	347	217	257	354	260
% of live births	19	12	14	18	13
No. of new clients registered	581	522	525	620	782

Source*: 1) Community Nursing Service Reports; 2) Births Register, Epidemiology Services Department*

Selected Childhood Diseases

Asthma is ranked as the 4th leading cause of hospitalization for children 1-4 years of age. Asthma accounted for about 7% of all hospital discharges in this age group for 2014, decreasing by about 2 percentage points compared to 2013.

Gastroenteritis is the 7th leading cause of hospitalization for children 1-4 years old and also decreased in absolute and relative standings in 2014 compared to the previous year.

There were no deaths due to those diseases for 2013 and 2014.

Table 24: Hospitalized cases and deaths due to asthma, intestinal infectious diseases with rates per 1,000 children 1-4 years of age, by year, for 2013 and 2014

Disease/Condition	ICD 10 Code	Type	2013			2014		
			No.	Rate*	%	No.	Rate*	%
Asthma	J45-J46	Cases	57	6.1	9.2	45	4.9	6.9
		Deaths	-	-	-	-	-	-
Gastroenteritis	A00-A09	Cases	25	2.7	4.1	16	1.8	2.5
		Deaths	-	-	-	-	-	-

Injuries and Accidents

Injuries are significant causes of disability for young children. There were 12 hospital discharges due to "Injuries" which was ranked 10th among leading causes of hospitalization for children 1-4 years old in 2014, accounting for about 1.8% of all discharges and 1.3 discharges for every 1,000 children 1-4 years of age.

There were no deaths due to accidents among children 1-4 years of age.

Adolescents (10-19 years)

Teenage Pregnancy

Pregnant teens and their unborn babies have distinctive medical risks including: i) Lack of prenatal care; ii) Increased risk of pregnancy-induced hypertension and preeclampsia; iii) Premature birth; iv) Increased risks of STDs; and v) post-partum depression, to name a few.

Over the past decade, the rate (per 1,000 female 10-19 years) and the proportion of births due to teenagers have markedly declined, reaching their lowest levels in 2012 and 2013. However in 2014, both indicators have increased to levels noted since 2008/2009. The teenage birth rate has increased steadily over the past two (2) years since 2012 and 2013 – when the lowest rates for the decade were observed.

Table 25: Selected teenage pregnancy indicators by year for 2005 to 2014

Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total births	2053	2074	2081	2113	2051	1826	1908	1934	1975	2066
Teenage births	356	360	383	328	322	308	280	270	272	302
% of total births	17	17	18	16	16	17	15	14	14	15
Rate per 1,000 females 10-19 years	24	24	26	22	22	21	19	19	20	22

Source*: Birth Register, Epidemiology Services Unit*

Accidents, Homicides and Suicides

Accidents, homicides and suicides together accounted for about 51% of all adolescent deaths, 60% of male adolescent deaths and 34% of female adolescent deaths for 2012 to 2014 combined. The mortality rate for males more than double that of females for all accidents and violent deaths considered, particularly for homicides where the rate for males is almost 4 times greater than females.

Table 26: Number of deaths due to accidents, homicide and suicide among adolescents (10-19 years) by sex, with per cent of all adolescent deaths and rates per 1,000 population 10-19 years, for 2012 to 2014 combined

Disease	ICD 10 Code	Total			Male			Female		
		No.	%	Rate*	No.	%	Rate*	No.	%	Rate*
Accidents	V01-X59	7	14	0.24	5	15	0.34	2	11	0.14
Homicide	X05-Y09	15	29	0.52	12	36	0.82	3	17	0.21
Suicide	X60-X84	4	7.8	0.14	3	9.1	0.20	1	5.6	0.07

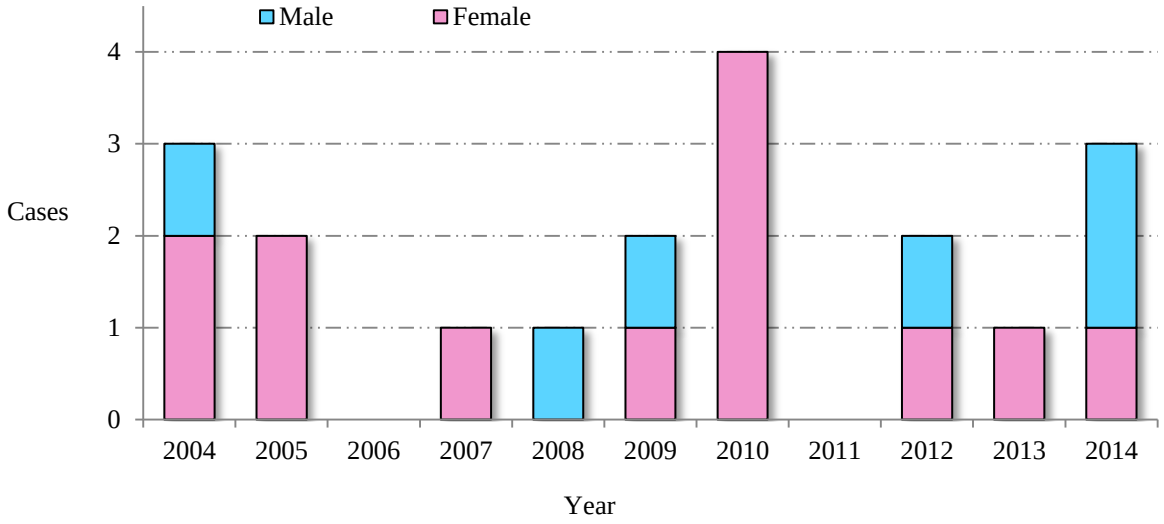
Source*: 1) Deaths Register, Epidemiology Services Department; 2) Population estimates, Government Central Statistics Department*

HIV Infection

As at December 2014, there were 37 newly diagnosed cases of HIV infection on the National Register 3.6% of total newly diagnosed cases since 1985. Females comprise about 81% of newly diagnosed cases.

Over the past 11 years, the number of newly diagnosed cases of HIV among adolescents ranged between 0 and 4 – with no cases reported for 2006 and 2011. In 2014 the male-to-female ratio was 2:1, the highest observed for any year since 1985.

Figure 30: Reported newly diagnosed cases of HIV infection among adolescents (10-19 years) by sex and year, for 2004 to 2014



Females of Reproductive Age (15-44 years)

Abortions

Although a relatively small reduction in the number of hospitalizations due to "abortions" among females of reproductive age (15-44 years) was noted in 2014 compared to 2013, the proportion of total hospital discharges was similar overall and when disaggregated into "youth" (15-24 years) and "older adults" (25-44 years) age groups.

About 5 per 1,000 women 15-44 years were hospitalized for abortion in 2014 compared to 6 per 1,000 for 2013; the rate for young women (15-24 years) was about 5 per 1,000 for both years.

Table 27: Number of discharges, discharges per 1,000 population and percentage of total discharges due to abortions among women 15-44years, 2013 and 2014

Age (years)	2013			2014		
	No.	Rate*	%	No.	Rate*	%
Total	243	5.9	5.8	198	4.8	5.5
15-24	80	5.3	5.3	68	4.5	5.1
25-44	163	6.3	6.2	130	5.0	5.8

Source: 1) Medical Records Departments, Victoria and St. Jude Hospital; 2) Epidemiology Services Department

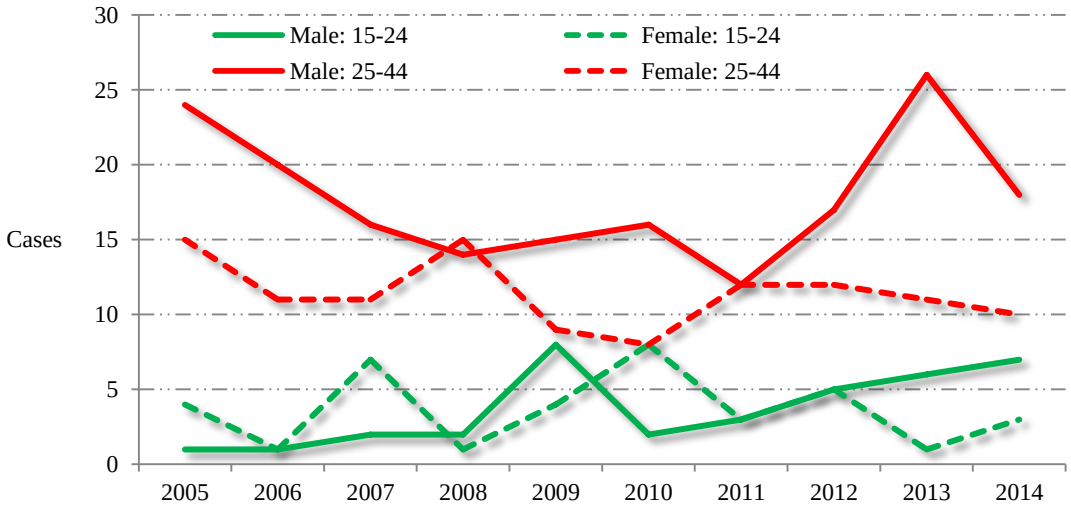
HIV Infection

As at December 2014, at total of 303 females aged 15-44 years were newly diagnosed with HIV, representing 28% of the total newly diagnosed cases – compared to 35% for males of the same age group.

Young women (15-24 years) accounted for 24% of newly diagnosed cases among females 15-44. However, females represent 54% of newly diagnosed cases among the youth – compared to 40% for adults 25-44 years.

Over the past 10 years, newly diagnosed cases among females 15-44 years have occurred in random but moderate peaks and troughs (*see Figure 31*). Since 2011, newly diagnosed cases among males has increased; cases among males 20-44 years rose dramatically for 2012 and 2013 to its highest level for the decade in 2013, followed by an equally dramatic drop in 2014; for the youth the increase has been gradual but steady since 2010 – recording more cases than female counterparts for two consecutive years for the first time during the decade.

Figure 31: Reported newly diagnosed cases of HIV infection among persons aged 15-44 years by age group and sex for 2005 to 2014

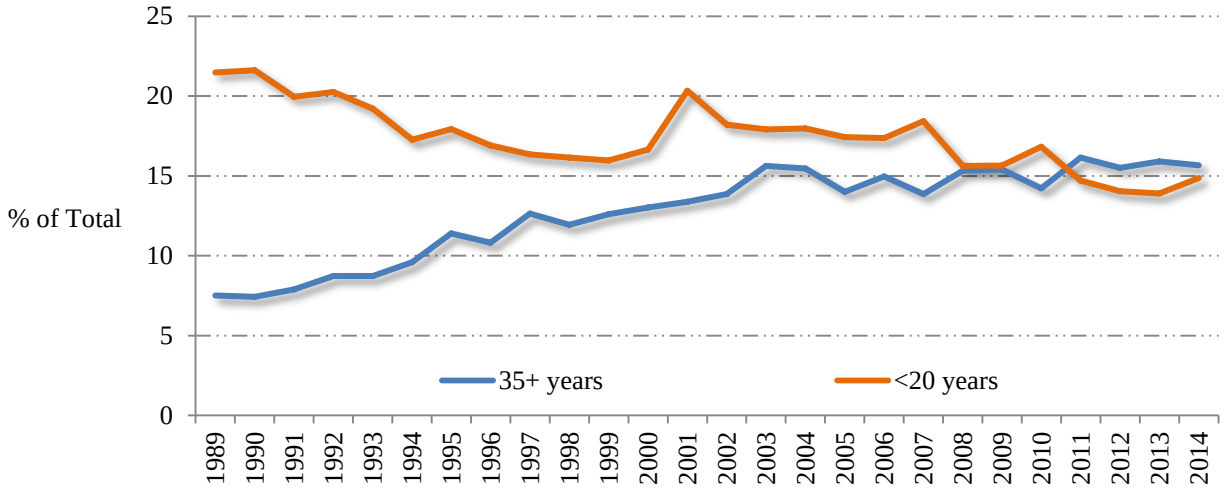


Birth Order by Age of Mother

Birth order and age of mother have been found to be associated with health outcomes for both children and mothers including infant mortality risk, cancer development, likelihood of introduction of communicable diseases and birth weight. Pregnant women greater than 35 years of age and of teen age are considered as "risky pregnancies" as well as women of all ages who deliver their first baby or 5 or more babies.

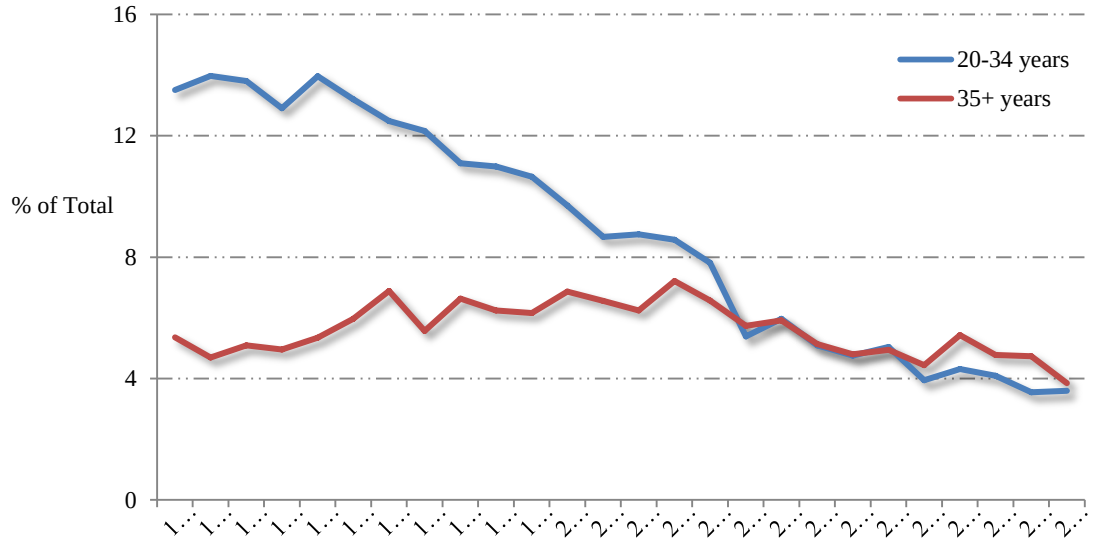
Over the past 26 years, the percentage of live births delivered by women 35 years of age or older has increased steadily from between 5% and 10% in the early nineties to just above 15%. During the same period, the percentage of live births born to women under 20 years decreased from just above 20% at the beginning of the nineties to below 15%. This result provides some evidence of proportionately more women delaying childbearing until later years.

Figure 32: Percentage of total live births among teenagers and women aged 35 years or older by year, 1989 to 2014



The percentage of women who delivered 5 or more live births decreased to lowest levels for women aged 20 years or older over the past two and a half decades. The reduction was more dramatic for women aged 20-24 years which fell progressively from greater than 12% to less than 4% in 2014. The decline was gradual for women 35 years or older and only began in 2003 (*see Figure 33*).

Figure 33: Live births of parity order 5 or higher as a percentage of total live births, delivered by women aged 20 years or older, by age of mother and year, 1989 to 2014



Utilization of Family Planning, Antenatal, Intranatal and Postnatal Services

The data presented here represent family planning, antenatal and postnatal services provided by the government-owned and operated Primary care facilities, which are managed by the Community Nursing Service of the Ministry of Health. All deliveries are cared for by medical personnel at the maternity wards of the acute general hospitals, even after some babies are born before arrival (BBA).

New clients registered at antenatal care clinics ranged between 71% and 74% for 2010 to 2014. Although new clients seen before 12 weeks of pregnancy increased progressively from 14% in 2010 to 20% in 2014 the indicator is still way below the MCH (Maternal and Child Health) standard of 90%.

The proportion of deliveries by caesarean section increased gradually from 14% to 24% for the aforementioned period. The number of infants seen and examined at postnatal clinics in 2014 remained at 86% of all live births – the same for 2012 and 2013; the highest proportion for the period was 92% which was noted in 2010. Exclusive breast feeding at 6 weeks remained below 50% for each year during the period – the lowest proportion (40%) was seen in 2014. The number of mothers examined reached its highest level in 2014.

Table 28: Selected antenatal, intranatal and postnatal care statistics by year, 2010 to 2014

Type of Service	Indicators	Year				
		2010	2011	2012	2013	2014
Antenatal Care	Number of clinics held	1,617	1,651	1,573	1,580	1,589
	Total new clients	1,312	1,347	1,428	1,443	1,501
	Total attendance	8,208	8,683	8,775	8,865	9,390
	… New clients as a % of total births	72	71	74	73	73
	… Average attendance per clinic	5.1	5.3	5.6	5.6	5.9
	… Average attendance per case	6.3	6.4	6.1	6.1	6.3
	New clients seen <12 weeks of pregnancy	189	219	253	268	304
	… % of total new clients	14	16	18	19	20
	No. of positive new VDRL clients	18	17	5	16	18
	No. of positive VDRL clients treated	14	14	4	7	11
	… % of total new clients	1.4	1.3	0.35	1.1	1.2
	… % positive VDRL treated	78	82	80	44	61
Deliveries	Normal	1563	1598	1526	1528	1565
	…% of total births	86	84	79	77	76
	Caesarian section	260	309	401	441	499
	… % of total births	14	16	21	22	24
	Other and unknown	3	1	7	6	2
	…% of total births	0.16	0.05	0.36	0.30	0.10
Post-natal Care	No. of clincs held	987	945	971	983	1,071
	No. of infants seen and examined	1,649	1,498	1,636	1,673	1,741
	… % of live births	92	80	86	86	86
	No. of infants breast fed only, at 6 wks	712	709	722	736	694
	… % of new infants seen	43	47	44	44	40
	No. of mothers examined	1,068	1,013	1,178	1,209	1,385
	… % of live births	59	54	62	62	68

Source: 1) Community Nursing Service Reports; 2) Epidemiology Services Department; 3) Maternity wards of Victoria and St Jude Hospitals

The Elderly (65+ years)

The Top Five (5) Leading Causes of Death by Sex

The top 5 leading causes of death for 2014 are the same for males and females aged 65 years or older. However, the order of ranking is different – except for hypertension which is ranked 5th for both sexes. The death rate among males is also higher for cancers, heart diseases and cerebrovascular disease – particularly for cancer and heart disease where the rate is more than twice that of females.

The top 5 leading causes accounted for about two-thirds of all deaths for both sexes.

Table 29: The top 5 leading causes of deathfor persons aged 65 years or older by rank and sex, with percentage of total death and rates per 1,000 population

Rank	**Male**				**Female**			
	Cause of Death	No.	%	Rate*	Cause of Death	No.	%	Rate*
1	Malignant neoplasms	100	25	15	Diabetes mellitus	63	15	7.2
2	Heart diseases	70	17	11	Malignant neoplasms	58	14	6.6
3	Cerebrovascular diseases	49	12	7.4	Heart diseases	56	14	6.4
4	Diabetes mellitus	30	7.4	4.5	Cerebrovascular diseases	53	13	6.0
5	Hypertensive diseases	23	5.7	3.5	Hypertensive diseases	36	8.8	4.1
Total top 5 causes of death		272	67	41		266	65	30

The Top Five (5) Leading Causes of Hospitalization by Sex

"Diabetes" and "Stroke" respectively ranked 1st and 2nd among males, 5th and 1st among females, are the only two causes that are on the list of the top 5 leading causes of hospital for both sexes. However, the rate of hospitalization for diabetes for elderly males is twice that of their counterpart females.

Table 30: The top 5 leading causes of hospitalization for persons aged 65 years or older by rank and sex, with percentage of total hospital stays and rates per 1,000 population

Rank	Male				Female			
	Disease or Condition	No.	%	Rate*	Disease or Condition	No.	%	Rate*
1	Diabetes mellitus	53	6.7	8.0	Stroke	58	7.2	6.6
2	Stroke	40	5.0	6.0	Heart failure	43	5.3	4.9
3	Other diseases of urinary system	33	4.2	5.0	Other septicaemia	38	4.7	4.3
4	Other chronic lower respiratory diseases	30	3.8	4.5	Hypertensive diseases	35	4.4	4.0
5	Diseases of the skin & subcutaneous tissue	29	3.7	4.4	Diabetes mellitus	33	4.1	3.7
Total top 5 causes of hospitalization		185	23	28		207	26	24

Source: 1) Medical Records Departments, Victoria and St. Jude Hospital; 2) Epidemiology Services Department

Pneumonia

The elderly are more susceptible to pneumonia than younger populations. The prevalence of disability and comorbid diseases increase with age and are associated with increased risk of pneumonia. Consequently, the elderly comprise a growing proportion of those at risk. Known independent risk factors for pneumonia include alcoholism, asthma, immunosuppression, heart disease, institutionalization, and age greater than 70 years.

Pneumonia respectively accounted for 2.9% and 2.7% of the total hospital discharges among the elderly for 2013 and 2014.

Table 31: Number of hospital discharges and deaths due to pneumonia by year, among elderly persons (65 years or older), with percentage of totals and rates per 1,000 population, 2013 and 2014

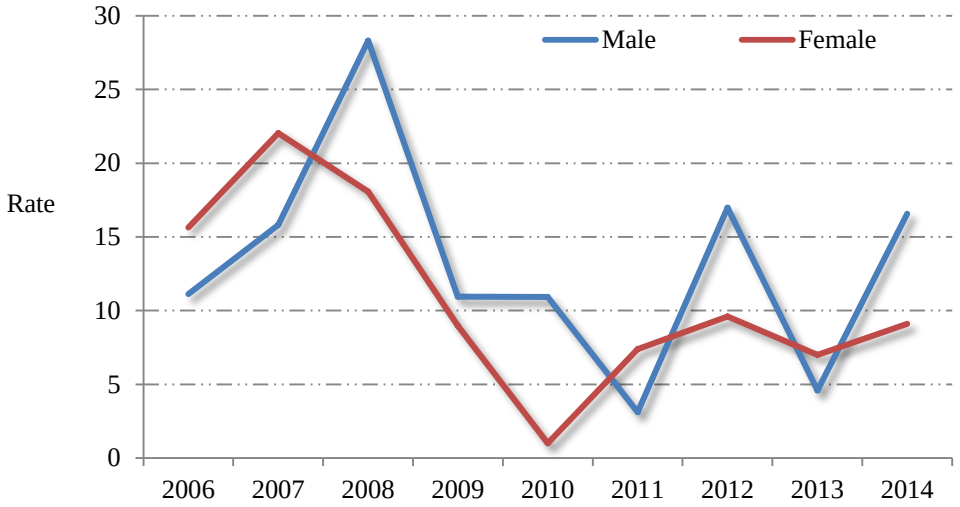
Item	Sex	2013			2014		
		No.	Rate*	%	No.	Rate*	%
Hospital stays	Total	19	1.3	2.9	22	1.4	2.7
	Male	11	1.7	3.5	11	1.7	2.7
	Female	8	0.93	2.4	11	1.2	2.7
Deaths	Total	9	0.60	1.4	19	1.2	2.3
	Male	3	0.46	0.9	11	1.7	2.7
	Female	6	0.70	1.8	8	0.9	1.9

Source: 1) Medical Records Departments of Victoria and St. Jude Hospital; 2) Epidemiology Services Department

Elderly males die at a higher rate than elderly females every year during the period 2006 to 2014, except for 2006, 2007 and 2010. The death rate for females fell progressively to its lowest for the period in 2010 (about 1 per 10,000) from its highest (21 per 10,000) in 2007, and rose to about 9 per 10,000 in 2014. Similarly, the death rate for males fell to its lowest in 2011 (3 per 10,000)

from its highest in 2008 (28 per 10,000), but has ensued in peaks and troughs to 17 per 10,000 in 2014 (*see Figure 34*).

Figure 34: Trends in sex-specific death rates per 10,000 population due to pneumonia among persons 65 years or older, 2006 to 2014



Males

Top 5 Causes of hospitalization and Death

"Injuries" comprises the leading cause of hospitalization for males, representing about 10% of all hospital stays and 4.2 stays per 1,000 population among males for 2014. Diabetes mellitus is ranked 2nd and pneumonia 3rd (*see Table 32*).

The top five (5) leading causes of death among males exactly mimic that of elderly males with respect to cause of death and rank. This is not very surprising because about 56% of deaths among males were elderly men. The top 5 leading causes accounted for about 54% of total deaths among males and about 5 deaths for every 1,000 males.

Table 32: Top 5 leading causes of hospitalization and death by cause and rank, with percentage of total and rates per 1,000 males, 2014

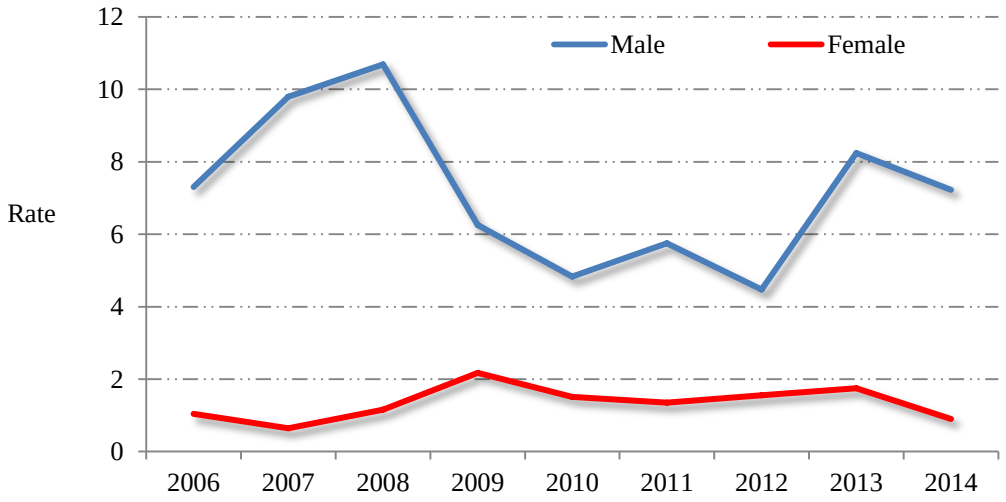
Rank	Hospitalization				Deaths			
	Cause	No.	%	Rate*	Cause	No.	%	Rate*
1	Injuries	356	10	4.2	Malignant neoplasms	142	19	1.7
2	Diabetes mellitus	137	3.7	1.6	Heart diseases	108	15	1.3
3	Pneumonia	126	3.4	1.5	Cerebrovascular diseases	62	8.5	0.73
4	Skin diseases	109	2.9	1.3	Diabetes mellitus	45	6.2	0.53
5	Other chronic lower respiratory diseases	101	2.7	1.2	Hypertensive diseases	37	5.1	0.44
Total top 5 causes		829	22	9.8		394	54	4.6

Accidents

Accidents comprise a major cause of injury and death among males; if considered as a principal cause of death, accidents would rank 4th for 2014 – just edging out diabetes mellitus.

Accidents disproportionately affect males, with rates as high as 5 times that of females for some years. Over the past nine (9) years (*see Figure 35*) the death rate due to accidents among females has remained below 2 per 1,000. The death rate for males rose to its highest (over 10 per 1,000 population) for the period in 2008 and fell to its lowest (just above 4 per 1,000 population) in 2012, but has since increased to about 7 per 1,000 in 2014.

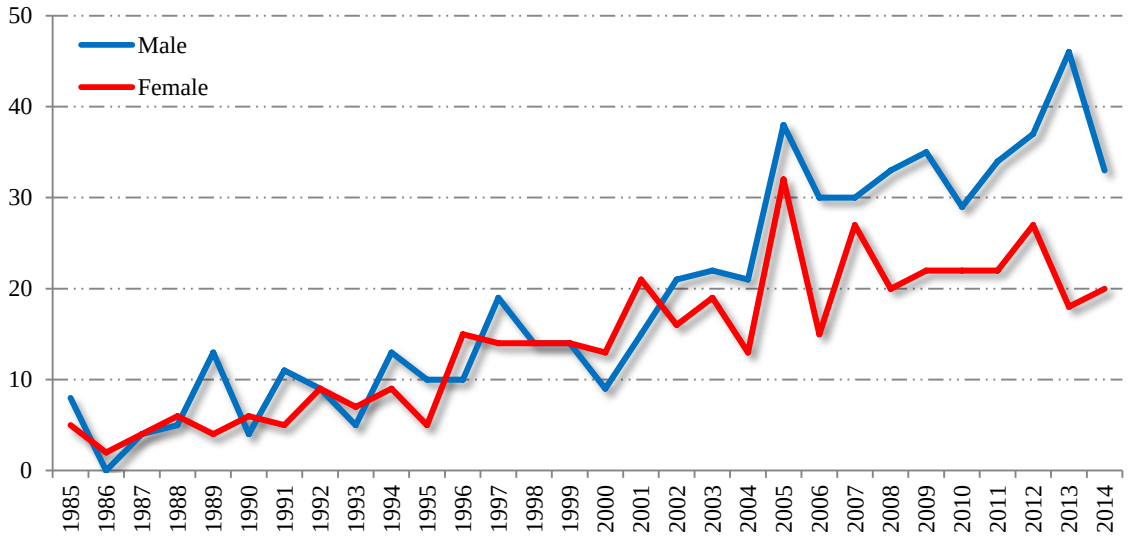
Figure 35: Sex-specific death rates per 1,000 population due to accidents by year, 2006 to 2014



HIV and AIDS

Males represent 55% of the total number of reported newly diagnosed cases of HIV infection from 1985 to 2014. From 2002 to 2014, notably more males than females were reported for every year – compared to the period 1985 to 2001 – and hence, the gender gap widened (*see Figure 36*).

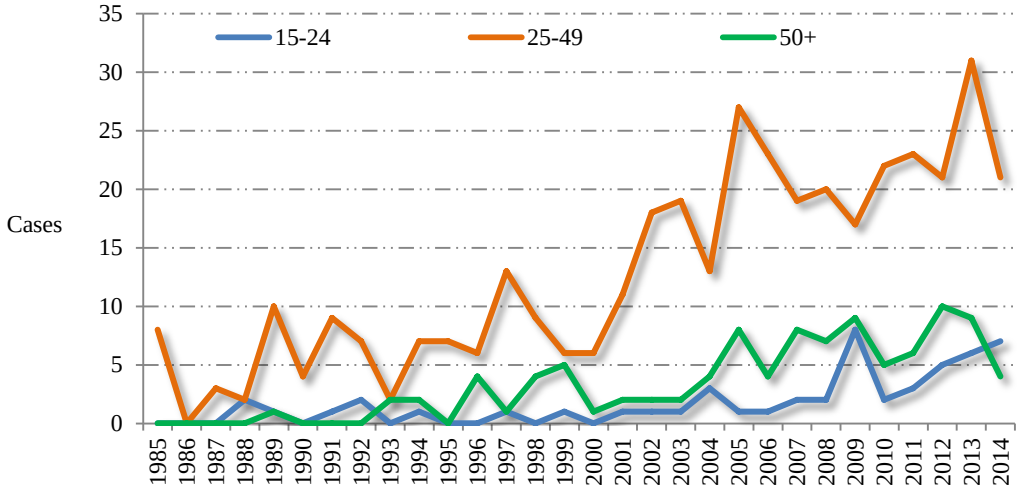
Figure 36: Reported newly diagnosed cases of HIV infection by gender and year, 1985 to 2014



Since 1985, significantly more males 25-49 years were newly infected every year, than young males (15-24) and males 50 years or older, particularly during 2000 to 2014 when the gap got wider with every passing year.

In 2014 the number of newly diagnosed cases fell overall and for males “25-49” and “50 +” age groups; newly diagnosed cases among young males (15-24 years) increased for each year since 2010.

Figure 37: Reported newly diagnosed cases of HIV infection among males aged 15 years or older by age group and year, 1985 to 2014



3. Policies, Plans, Programmes

3.1 National Health Policy and Strategic Plan

Saint Lucia's political system and government are patterned after the Westminster model, identified with British colonial system. As a result, each government Ministry is responsible for the implementation of policies and plans of its sector. The National Development plan is therefore based on plans submitted by each ministry and through consultations with each ministry. In 2014 the Minister of Finance and Prime Minister recognized health as one of the major priority areas for the Government of Saint Lucia in an effort to strengthen health reform.

Saint Lucia started its health reform agenda in the later end of the 1990's. At the turn of the twenty-first century, the Health Sector Reform Proposals formed the foundation for the National Health Strategic Plan 2006-2011. The strategic plan outlined the strategic roadmap for the proposed reforms and the impetus for action and change in the health system in Saint Lucia. In the absence of a new strategic plan, the plan for 2006-2011 continued to guide the operations of the Ministry of Health.

There are eight objectives of the Saint Lucia Health system:

1. The provision of efficient quality health care
2. The maintenance of an adequate programme of primary and preventative health care
3. Greater equity in the allocation and use of health resources
4. The design and implementation of comprehensive and integrated programmes for the prevention and treatment of chronic diseases, the rehabilitation of the disabled, and the treatment and care of the older population
5. The improvement and sustainability of mental health services to the level of contemporary international standards
6. The reduction of the incidence of environmental health problems
7. The promotion of high standards of industrial and occupational health and safety
8. Improvement in the system of health financing, making it more affordable and sustainable

These objectives for the health sector are indicative of the organization of the ministry into subdivisions or departments, which are responsible for the various health programmes, including preventative services, health education and promotion, environmental health, human and gender related services, hospital and curative services.

Health Financing

There is a common perception that the existing system of healthcare financing across the CARICOM region is inimical to sustainability in its present form. Essentially, the existing system fails to encourage the quality improvements that are necessary. This is further exacerbated by growing uncertainty and related economic challenges that constrain available

resources. There is no doubt that health financing in countries such as Saint Lucia, facing demographic and epidemiological challenges, is being proposed against a backdrop of competing financial demands. Sources of financing and the mechanisms through which resources are allocated within the health system have a direct impact on the health status of the population.

A financing mechanism must be informed by policy goals and principles that guide the delivery of health care within the system. Furthermore, the financing mechanism must demonstrate its ability to achieve desired targets and outcomes while having the capability of meeting the financial requirements of a comprehensive health system. A good health financing system is one that can be responsive to all levels of healthcare delivery, achieve financial sustainability, and ensure equitable access to health services. In 2001, PAHO suggested that the information on the financing of Saint Lucia's public health system was both timely and reliable; however, the same was not noted about the private sector. A financing mechanism must be informed by policy goals and principles that guide the delivery of health care within the system. Furthermore, the financing mechanism must demonstrate its ability to achieve desired targets and outcomes while having the capability of meeting the financial requirements of a comprehensive health system. A good health financing system is one that can be responsive to all levels of healthcare delivery, achieve financial sustainability, and ensure equitable access to health services. In 2001, PAHO suggested that the information on the financing of Saint Lucia's public health System was both timely and reliable; however, the same was not noted about the private sector.

Traditionally, the health sector in Saint Lucia derived its financing from a variety of mechanisms: public financing, user fees, loans, grants and donations (external sources), and private insurance. Currently, health services in Saint Lucia are funded from four principal sources: the consolidated fund, donor contributions, out-of-pocket payments, and private insurance schemes.

In the recent past, health expenditure has grown considerably. According to the National Strategic Plan for Health (2006-2011), health expenditure grew by between 2001 and 2006, from XCD61.7M to XCD86.7M. In 2014, the total Budgetary Estimates for 2014 was XCD 122.7M. Of that amount XCD99.3M was allocated to the Recurrent Expenditure and XCD 23.3M was allocated to Capital Expenditure. This together with external funding through grants, budgetary support and loan drives the programs of the Ministry of Health. Currently health financing reforms are a growing concern as the Ministry faces with the rising cost of delivering health care. The 42% increase in health expenditure from 2006 to 2014 can be largely attributed to the growing demands placed on the public health system by the country's changing demographic and epidemiological profile. Indeed, the public health budget of 2006-2007 accounted for 9.18% of the total health budget.

Priority Areas 2014

1. *Health Systems Development and Strengthening*
    - Strengthening Primary Health Care
    - Strengthening Essential Public Health Functions
    - Development of a governance model that reflected the oversight role of Central Agency
    - Health Management Information System
    - Review existing Health Legislations /Regulations
    - Establish public/private partnership in service delivery

2. *Human Resource Development*
    - Human Resource Planning
    - Performance Management System
    - Establish collaboration with training Institutions
    - Reward and Incentive System
        a. Results Based Financing

3. *Health Financing*
    - Universal Healthcare
    - Essential Package of Health Services
    - Costing of Health Services
    - National Health Accounts

4. *Health Infrastructure*
    - Hospital Development
    - Maintenance/Repairs
    - Reconstruction/Refurbishment of Community Health Facilities
    - Disaster Risk Reduction – Safe Facilities Assessments

5. *Health Services Development and Delivery*
    - Chronic Non-Communicable Diseases
    - Communicable Diseases
    - Mental Health
    - Quality care
    - Health and Wellness Promotion

3.2 Major Health Initiatives for system Strengthening

Chronic Disease Policy

Chronic diseases disproportionately affects morbidity and mortality and is responsible for about 80% of all deaths, the Ministry of Health top 10 causes of death. The Ministry of Health recognized the need for a multi-sectorial action plan to mitigate against the impact and the growing burden of NCDs. The action plan and policy was developed with key partners and relevant stakeholders and identified the priority chronic conditions – malignant neoplasms, cardiovascular disease, hypertension, diabetes, chronic pulmonary diseases and mental health. The risk factors for the preceding conditions centred on behavioural enablers of unhealthy diet, inadequate physical activity, tobacco use, obesity and the harmful use of alcohol.

Through financing and technical support from PAHO/WHO, an NCD policy, and implementation plan was developed. The Policy identified four (4) priority areas for action.

Universal Healthcare

- Essential Basket of Services
- Health Financing

Agency Goals and Targets

Performance Budgeting

The goal and target for the health sector in 2014 were defined by a response to not only the health situation, but was part of a larger process of budget reform. The country's fiscal challenges had increased the need for greater focus and scrutiny to be placed on all aspects of Public Financial Management (PFM) and by extension the budget process which is an integral component of PFM.

This led to a reform of the budget process, which resulted in changes in the process for all line ministries, including the Ministry of Health. This reform, required agencies to embrace Performance Budgeting which allows them to measure and monitor the performance of their various programmes. In an environment where resources are scarce there was a need to measure the results of government spending in order that resources can be more efficiently allocated. The core programme components for the Ministry of Health were reassigned under 5 major categories;

- Policy, Planning and Administrative Services
- Human Services and Gender Relations
- Primary Healthcare Services

- Public Health Services
- Secondary and Tertiary Healthcare Services

Key Programme Strategies 2014

Policy, Planning and Administrative Services

Programme Objective: To provide leadership, policy direction, strengthen governance and foster partnerships and collaboration with supporting agencies to support the Ministry of Health to deliver its programmes efficiently and effectively.

Key Programme Strategies

- Ensure that the Ministry is staffed with a cadre of highly trained and appropriately skilled staff and that staff is deployed based on skills and needs of the various departments through the development of a Human Resource for Health (HRH) plan and HRH database.
- Strengthen evidence-based decision making, planning, monitoring and evaluation of programmes through the establishment of a functioning electronic health monitoring and surveillance system.
- Ensure adequate safety and quality of care at all medical and social care facilities through the establishment of licensing legislation and standards.
- Collaborate with and encourage Public Private Partnerships (PPP) through information sharing, standardization of equipment and services.
- Ensure continuity of care through the establishment of a two-way referral system in all tiers of health care delivery

Human Services and Gender Relations

Programme Objective: To address the underlying social and economic determinants of health through policies and programmes that enhance health equity and integrate pro-poor, gender response and human rights-based approaches.

Key Programme Strategies

- Monitoring and evaluation of departmental programmes to achieve the stated targets and objectives.
- Using the Quality Management Framework as a tool for defining the standards and guidelines for the establishment and operation of homes (for juveniles and the elderly).

- Monitoring and evaluation of departmental programmes to achieve the stated targets and objectives.
- Submission of report to Committee on the Rights of the Child in Geneva by May 2014 to serve as the building block for the development of child protection policies.
- Using gender statistics to inform national policies, programmes and projects.
- Establish health information management at Human Services departments to strengthen data management and reporting

Primary Healthcare Services

Programme Objective: To provide accessible, quality, integrated health promoting, preventative, routine emergency medical and rehabilitative services to individual, families and communities in order to improve and sustain health and well-being.

Key Programme Strategies

- Extension of opening hours at community health facilities to increase access to PHC services.
- Standardize the quality of services provided across the network of PHC services through the development of quality policies, protocols and procedures.
- Monitoring and evaluation of diabetes, hypertension and maternal and child health services.
- Capacity building of management and staff through in service continuing education training programmes and external technical training in the areas of dental therapy, pharmacy, podiatry and advance nursing practice

Public Health Services

Programme Objective: To protect the health and improve the quality of life of the population through the prevention and treatment of disease and other physical and mental conditions, through case surveillance and the promotion of healthy behaviours.

Key Programme Strategies

- Development of national policies on tobacco and alcohol use and a National Anti-Drug Plan geared towards the elimination of alcohol and tobacco use.
- Strengthening and monitoring compliance and enforcement through the review of Public Health legislation and regulations.
- Increased sensitization on priority health areas through increased public awareness and communication campaigns.

- To promote health behaviour change through an integrated approach of community mobilization and alliance building.
- Capacity building of health professionals through improving competencies and skills in public health and through continuous education programs.
- Increase evidence based programming and interventions through research

Secondary and Tertiary Healthcare Services

Programme Objective: To effectively and efficiently provide services in accordance with best practices to the population.

Key Programme Strategies

- Increasing service delivery through ambulatory and day unit settings
- Use of public awareness campaigns on Chemical dependence and treatment services.
- Sensitization sessions in early intervention and referral of chemical dependence among Hospital nurses and doctors and primary health care teams
- Strengthening of diagnosis services for early detection of disease processes
- Use of public awareness sessions on mental health and chemical dependence

4. Health Infrastructure

4.1 Organization of the System

Public Sector, Private Sector and NGO Relationships

Most of the health service delivery and administration of such are provided through the public sector. The responsibility for the delivery of primary, secondary and tertiary healthcare services lies with the Ministry of Health, however, many of the same are also provided through the private service providers and in some instances, public/private sector partnerships. The administration of the Ministry of Health is coordinated by the Permanent Secretary and the Chief Medical Officer is tasked with the administration of primary care services and public health. The Minister of Health is the overall leader of the Ministry.

The structure of the Ministry of Health provides for service delivery in various departments and programmes. These programmes all have the overall aim of providing quality driven care for the ultimate health and wellness of the people of Saint Lucia. The departments within the Ministry of Health are: Administration, Environmental Health, Primary Care services, Hospitals, Health Education and Promotion, Public Health and Mental Health Services. There are also special projects implemented within the Ministry to achieve goals for a period of time like the Health Information Management System unit.

The amount of health services being rendered by the private sector has grown over the years. Services such as dental, medical, surgical, homeopathic medicine, alternative medicine, specialty diagnostic services, home health care, pharmacy, physiotherapy and other rehabilitative services are all now readily available in the private sector. These services have been decentralized and span the rage of the entire country. The emergence of alternative medicine practitioners has augmented the diversity of the service and these practitioners register their practice through the Allied Health Council.

Environmental Health has shared responsibility across many sectors to provide overall environmental health, food and water safety, sanitation services and vector control. Vector control is largely done with the use of insecticides and is regulated in Saint Lucia by the Pesticide Control Board. In the effort to control the spread and eventually eradicate vector-bourne diseases, this board plays a significant role in assisting in executing the agenda of the Ministry of Health. Water safety is the responsibility of the Ministry of Health, however, the supply of water is managed by a statutory cooperation and fall under the ambit of the Ministry of Infrustructure.

Pharmacy related drug activity is under the supervision of the Chief Pharmacist. The monitoring of pharmacy drug –use both public and private is done by a Drug Inspector who reports to the Chief Pharmacist at the Ministry of Health.

The Medical and Dental Council, Nursing Councils and Allied Health Councils are responsible for the registration and monitoring of Physicians, Dentists, Nurses and Allied Health professionals.

Non-Governmental Organizations (NGOs) continue to play a role in the identification of problems and in the implementation of remedial activities. These organizations work in collaboration with Ministry of Health. NGOs such as the Saint Lucia Blind Welfare Association, Saint Lucia Cancer Society, Saint Lucia Sickle Cell Association, Saint Lucia Arthritis and Lupus Association and The Saint Lucia Diabetic and Hypertensive Association continue to make major contributions to the health sector.

Corporate society as well have partnered with the Ministry of Health to undertake health promotion and education activities. They have initiated campaigns geared at a holistic lifestyle change which is aimed at impacting the entire population. All these are in addition to the activities undertaken by the Bureau of Health Education within the Ministry of Health.

A small percentage of Saint Lucians are covered through private health insurance. Only a quarter of the population has some form of health insurance – public or private – leaving three-quarters without health insurance coverage.

The NIC pays EC$5 million annually to the MOH to cover hospital services provided to its members (but not dependents) at Victoria Hospital and Saint Jude Hospital. The EC$5 million is a negotiated amount and is not based on actual billings to the NIC by the hospitals. The annual contribution is designed to cover only active workers and there is no NIC coverage for primary care expenditures, drug, or offshore medical care. In return, the MOH waives hospital user fees for NIC-covered workers.

Patients normally unable to pay the usual private sector fees can still be seen at the Tapion Hospital under arrangements with the MOH.

Patients may also get assistance for specialized treatment services not available on island. . Patients who need such services can apply for financial assistance from the Chief Medical Officer's office to receive treatment abroad. The decision concerning which patients to sponsor is highly discretionary and based on a review of the patient's financial situation, the urgency of the condition, and the availability of funds in the budget for off-island treatment.

Delivery of Public Services

Community Health Services

A network of 32 public health centers, one polyclinic (Gros Islet), and an outpatient department in each of the three main hospitals deliver PHC in Saint Lucia. Care by a nurse or nurse practitioner is available five full days (until 4:30 p.m.) and one half-day per week. Physicians are

available on select days with select hours. Those in need of care after the clinic is closed must go to hospitals for care.

PHC at the health center level primarily includes maternal and child health services; adult, infant, and child sick visits; nutrition services; health education services; diabetic and hypertension services; sexual and reproductive health services; dental care on select days; and phlebotomy services for screening done in a referral laboratory. Health or Wellness Centers hold specialized clinics on a weekly basis or more frequently for the management of diabetes, hypertension, psychiatric disorders, and birth control. Health care providers specializing in sexually transmitted infections (STI) and HIV travel to primary care sites to conduct clinics (and to distribute ARVs) in communities across the island on a weekly basis. This system seems to effectively reduce stigma and travel distances for patients. The PHC system is strong in the areas of maternal and child health care and infectious diseases as evidenced by nearly universal immunization, antenatal and postpartum coverage, and low mortality from infectious disease.

Health Centers provide pharmacy services on select days; if a patient needs a drug on a day when the pharmacy is not open he/she can obtain the drug with prescription at the nearest referral hospital or at a private pharmacy. Large employers (e.g., resort hotels) have a nurse on site or doctor on contract who provides health services to its employees, but such programs account for a small share of the island's health service delivery. NGOs and community groups involved in health primarily conduct health education activities; an exception is Planned Parenthood, which provides a notable share of family planning services and commodities on the island.

Hospital Services

More advanced secondary care and very limited tertiary care is delivered at the three hospitals on the island: Victoria Hospital, Saint Jude Hospital (parastatal), and Tapion Hospital (private).

The clinical load of the 160-bed Victoria Hospital is being transferred to the new 116-bed Owen King European Union Hospital.

Victoria Hospital is currently the main trauma facility in Saint Lucia, with 160 beds operating on a 24- hour schedule. The A&E ward has six acute care beds and one resuscitation room. X-ray, dialysis a diagnostic lab, nephrology, chemotherapy and pharmacy services are available. The hospital reports having a staff of physicians and surgeons specializing in nearly every area of medicine. The hospital's management structure is typical of most hospitals in the English-speaking Caribbean. The management team is comprised of an Executive Director, Nursing Director, Medical Director and Financial Director; however, key decisions rest with the MOH. The STI, HIV/AIDS clinical services, and leprosy programs operate out of Victoria Hospital.

St. Jude hospital, situated in the south is governed by a board of directors and receives an annual subvention from the government. Specialist care at St. Jude varies throughout the year depending

upon the level of medical staff available, most of whom come from overseas to serve on a voluntary basis.

Tapion hospital is the only privately owned acute care hospital on the island. It provides a variety of specialties and serves the entire population, particularly the population in the north. It is located in the city of Castries in close proximity to the National Public acute care hospital in the north.

For the most part, some specialized care not available at Saint Jude and Victoria hospitals are available at the Tapion Hospital.

The district hospitals (Soufriere and Dennery) are not equipped to provide a high level of acute care and therefore provide basic primary care, they however, also provide beds to accommodate minor medical, surgical and paediatric in-patients and maternity units for low- risk deliveries. Intermediate level care is also provided to in-patients suffering from chronic diseases.

The National Mental Wellness Centre is the only psychiatric hospital on the island. It is located in the city of Castries and is government owned and operated. This institution provides secondary care to psychiatric patients, in-patients and primary care through community psychiatric clinics at the hospital and in seven other districts around the island. Pharmacy, counselling, occupational therapy, home visits and mental health education are also provided through this facility. The Centre provides in-patient psychiatric services to the public. The hospital also provides counselling and out-patient services to the mentally ill. The community mental health programme is also operated from the National Mental Wellness Centre.

Formally Turning Point, the drug and alcohol detoxification centre provides in-patient detoxification and rehabilitation services to clients of drug and alcohol abuse. This is located on the compound of the National Mental Wellness Center.

Health Education and Promotion

The Bureau of Health Education of the Ministry of Health is responsible for health education and promotion throughout the country. The Bureau utilizes the Government information Service for the much of its media promotion, but still utilizes other media outlets. Within the bureau of health education and promotion, there is a communications unit with responsibility for ensuring coverage of health activities and ensuring that these are disseminated to the other media houses.

The bureau conducts special education forums upon request and also does so to specific target group included in health education and promotion programmes. Apart from using the media for educational programs, other mediums are used to disseminate health information. E.g. booklets, pamphlets, posters, charts, logos and maps. Articles about health appear regularly in most St. Lucian newspapers, particularly when commemorating diseases designated by the WHO as

having a significant impact on health status. Health supplements about outbreaks and epidemics of interest published when the need arises.

Disease Prevention and Control Programs

The community programme has introduced several programmes aimed at improving the overall health of the population particularly in the area of adolescent and reproductive health and maternal and child health.

The formation of a national perinatal committee for both public and private stakeholders has assisted in the many achievements under this programme. A perinatal plan was developed with the overall aim of improving the health of both mother and child. This was done by an in-house consultant.

With the assistance of PAHO, MMR2 coverage survey was conducted to determine the accuracy of coverage in Saint Lucia. A new vaccination schedule was developed after the Pertussis outbreak now allowing administration of vaccines from 2 months onwards.

There has been complete elimination of mother to child transmission of HIV disease as a result of the implementation of the HIV programme and efforts to control the spread of the disease are ongoing.

There are always efforts to combat the problem of CNCDs. A CNCD policy is being developed which will address many of the challenges with the management of this group of diseases.

4.2 Resources

Health Personnel

The categories of health personnel include Doctors, Nurses, Pharmacists, Allied Health Personnel and their support staff.

Table 33: Number of health personnel by categories and sector, with the population to each, as at December 2014

Category	Total		Public		Private	
	No.	Rate	No.	Rate	No.	Rate
Doctor	332	519	82	2,101	250	689
Nurse	275	626	275	626	-	-
Nursing Support Staff	113	1,524	113	1,524	-	-
Dentist	39	4,417	7	24,608	32	5,383
Dental Support Staff	16	10,766	16	10,766	-	-
Pharmacist	81	2,127	23	74,89	58	2,970
Pharmacy Support Staff	7	24,608	7	24,608	-	-
Allied Health Professional	454	379	77	2,237	377	457
Allied Health Support Staff	69	2,496	69	2,496	-	-
Administrative staff	65	2,650	65	2,650	-	-
Statistics, Medical records staff	17	10,133	17	10,133	-	-

Table 34: Number of nursing personnel by speciality and sector, with the population to each, as at December 2014

Category	Total		Public		Private	
	No.	Rate	No.	Rate	No.	Rate
Staff Nurse	141	1,222	141	1,222	-	-
Registered Nurse	45	3,828	45	3,828	-	-
Community Health Nurse	26	6,625	26	6,625	-	-
Ward Sister	26	6,625	26	6,625	-	-
Family Nurse Practitioner	11	15,660	11	15,660	-	-
Department sister	7	24,608	7	24,608	-	-
Public Health Nursing Supervisor	7	24,608	7	24,608	-	-
Principal Nursing Officer	5	34,451	5	34,451	-	-
Charge Nurse	3	57,418	3	57,418	-	-
Assistant Principal Nursing Officer	2	86,128	2	86,128	-	-
Manager, Wellness Centre	1	172,255	1	172,255	-	-
Nurse Anaethesist	1	172,255	1	172,255	-	-

Table 35: Number of medical personnel by speciality and sector, with the population to each, as at December 2014

Category	Total		Public		Private	
	No.	Rate	No.	Rate	No.	Rate
General practitioner	154	1,119	-	-	154	1,119
House officer	20	8,613	20	8,613	-	-
Internist	18	9,570	3	57,418	15	11,484
Unknown	17	10,133	-	-	17	10,133
Medical Officer	17	10,133	17	10,133	-	-
Surgeon, general	13	13,250	3	57,418	10	17,226
Obstetrician/Gynecologist	13	13,250	4	43,064	9	19,139
Radiologist	9	19,139	5	34,451	4	43,064
Ophthalmologist	8	21,532	-	-	8	21,532
Dermatologist	6	28,709	2	86,128	4	43,064
Pediatrician	6	28,709	3	57,418	3	57,418
Registrar	6	28,709	6	28,709	-	-
Anesthetist	5	34,451	4	43,064	1	172,255
Cardiologist	4	43,064	1	172,255	3	57,418
Gynecologist	4	43,064	-	-	4	43,064
Pathologist	4	43,064	1	172,255	3	57,418
Psychiatrist	3	57,418	3	57,418	-	-
Urologist	3	57,418	1	172,255	2	86,128
Emergency medicine	2	86,128	-	-	2	86,128
Oncologist	2	86,128	1	172,255	1	172,255
Senior Medical Officer	2	86,128	2	86,128	-	-
Specialist, ENT	2	86,128	1	172,255	1	172,255
Surgeon, orthopedic	2	86,128	2	86,128	-	-
Chief Medical Officer	1	172,255	1	172,255	-	-
Deputy Epidemiologist	1	172,255	1	172,255	-	-
Specialist, Electrophysiology	1	172,255	-	-	1	172,255
Epidemiologist	1	172,255	-	-	1	172,255
Herbalist	1	172,255	-	-	1	172,255
Medical Director	1	172,255	1	172,255	-	-
Neurosurgeon	1	172,255	-	-	1	172,255
Plastic surgeon	1	172,255	-	-	1	172,255
Specialist, Family medicine	1	172,255	-	-	1	172,255
Specialist, ICU	1	172,255	-	-	1	172,255
Specialist, Infectious diseases	1	172,255	-	-	1	172,255
Specialist, Orthopedics	1	172,255	-	-	1	172,255

Table 36: Number of allied health personnel by speciality and sector, per population, as at December 2014

Category	Total		Public		Private	
	No.	Rate	No.	Rate	No.	Rate
Massage therapists	230	749	-	-	230	749
Medical technologist	52	3,313	13	13,250	39	4,417
Social Worker	18	9,570	18	9,570	-	-
Physiotherapist	16	10,766	3	57,418	13	13,250
Environmental Health Officer	14	12,304	14	12,304	-	-
Optometrist	14	12,304	-	-	14	12,304
Psychologist	13	13,250	1	172,255	12	14,355
Imaging technologist	12	14,355	-	-	12	14,355
Psychotherapist	10	17,226	1	172,255	9	19,139
Dietician	9	19,139	1	172,255	8	21,532
Acupuncturist	8	21,532	-	-	8	21,532
Dental technologist	7	24,608	-	-	7	24,608
Family Life Educator	6	28,709	6	28,709	-	-
Dental therapist	5	34,451	-	-	5	34,451
Naturopaths	5	34,451	-	-	5	34,451
Reflexologist	5	34,451	-	-	5	34,451
Health Educator	4	43,064	4	43,064	-	-
Dental hygienist	3	57,418	-	-	3	57,418
Biomedical Engineer	2	86,128	2	86,128	-	-
Chiropractor	2	86,128	-	-	2	86,128
Counselor	2	86,128	2	86,128	-	-
Health Planner	2	86,128	2	86,128	-	-
Homeopath	2	86,128	-	-	2	86,128
Nutritionist	2	86,128	2	86,128	-	-
Occupational therapist	2	86,128	1	172,255	1	172,255
Program Officer	2	86,128	2	86,128	-	-
Radiographer	2	86,128	2	86,128	-	-
Biomedical Technician	1	172,255	1	172,255	-	-
Herbalist	1	172,255	-	-	1	172,255
Hospital engineer	1	172,255	1	172,255	-	-
Podiatrist	1	172,255	-	-	1	172,255
Psychiatric Social Worker	1	172,255	1	172,255	-	-

Facilities

In 2014 there were 32 operating wellness centres, one polyclinic located in the town of Gros Islet, and 2 district hospitals. The government operated wellness centres represent a well distributed network that serves the various communities and catchment population of the country. This network of primary healthcare services is established on the basis of the population distribution, transportation or bus routes, and the health sector's policy that each wellness centre should serve a catchment population within a minimum of three miles. These facilities serve as clinical service points, providing both preventative and curative services in the areas of chronic non-communicable diseases, sexually transmitted diseases, reproductive health, maternal and

child health services, communicable diseases and in 2013 there was the reintroduction of mental health services in community.

The health and education, nutrition, environmental health, and community nursing are primarily responsible for the delivery of preventative care services. Whereas, secondary care is provided by the two general hospitals, Victoria and St. Jude located in the northern and southern parts of the island, respectively. Some basic secondary care is also provided by the two district hospitals located in the town of Soufriere and the village of Dennery, where their mandate remains one that is largely entrenched in primary care, with some scaled-down secondary services. The psychiatric or mental hospital (Mental Wellness Centre) and the drug detoxification and rehabilitation centre (Turning Point), both located in the north of the island, and are the only institutions involved in what might be considered rehabilitative care.

Hospitals

There are 3 acute care facilities in St. Lucia (2 public, 1 private). In patient services are provided at the Victoria Hospital, St. Jude Hospital, Tapion Hospital, National Mental Wellness Centre and the Drug Detoxification and Rehabilitation Centre providing both acute care services and long-term rehabilitative care. All three acute care facilities house an Emergency Department.

The 3 acute general hospitals (Victoria, St. Jude and Tapion) deliver secondary care, and primary services through practitioners' clinics and the Accident and Emergency departments. In-patient services for medical, surgical, paediatric and obstetrics/gynaecology patients as well as X-ray, laboratory, pharmacy, physiotherapy, nephrology, and chemotherapy services are available at all 3 general hospitals. Victoria hospital is the main hospital and is located in the city of Castries in the North and financed and managed by the government. Its laboratory serves as a national reference laboratory for the island.

Out-Patient Services for General Morbidity

Out-patient services are provided at all the primary healthcare facilities including the acute care facilities.

The primary care facilities offer a wide range of services including dressings, routine medical clinics, maternal and child health services, vaccinations, counselling, dental services, etc.

More specialized clinical and diagnostic services are offered as out-patient services at the hospitals. These range from radiology, laboratory, oncology, dialysis, pharmacy, cardiology, Diabetes and Hypertension, paediatric, obstetrics and gynaecology, neurology, internal medicine, orthopaedic, ENT, surgery, nutrition and STI.

These services are primarily provided by the health centres and district hospitals, and at the casualty/emergency departments of the acute general hospitals. Those services may be specialist clinics conducted by consultants from the various disciplines, or routine medical clinics conducted by general medical practitioners. Private practitioners also provide general morbidity services but no data is currently available for these services.

Financial Resources

Recurrent and Capital Government Expenditures

Table 37: Total, recurrent and capital expenditure of government and health, with percent spent on health, 2009 – 2014

Item		2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Government Expenditure	Total	1,211,355,609	1,210,911,400	1,290,442,525	1,300,276,150	1,315,121,176
	Recurrent	807,476,200	844,284,900	848,017,225	805,355,150	934,805,176
	Capital	403,879,409	366,626,500	442,425,300	494,921,000	380,316,000
Health Expenditure	Total	152,531,441	129,928,080	153,045,993	140,616,759	126,109,885
	Recurrent	81,800,147	82,031,910	87,528,860	100,121,250	102,765,092
	Capital	70,731,294	47,896,170	65,517,133	40,495,509	23,344,793
% Health Expenditure	Total	13	11	12	11	10
	Recurrent	10	10	10	12	11
	Capital	18	13	15	8.2	6.1

4.3 Legislation

Framework

List of legislation pertaining to the health sector

- *Medical evidence Act – 1967*
- *Public Hospitals (Management) (Amendment) Act, 2000*
- *The Public Health Act – 1975(Revised 2001)*
- *Private Hospitals Act – 2001*
- *Quarantine Act - 2001*
- *Pharmacy Act – 2003*
- *Health Services (Complaints and Conciliation Act) - 2001(Revised December 2006)*
- *Health Practitioners Act – 2006*
- *Mental Hospitals Act – 2006 (Revised December 2006)*
- *Medical Officers Act – 1966 (Revised December 2006)*
- *Private Hospitals Act – 1966 (Revised December 2006)*
- *St. Jude Hospital Act – 2003 (Revised December 2006)*
- *Mental Health Act – 2008*
- *Data Protection Act – 2011*
- *Clinical Trials Act – 2015*
- *Millennium Heights Medical Complex Act - 2015*

Enactment of New Legislation

Saint Lucia has recently revised many out-dated pieces of legislation to reflect the changing health context. The cornerstone piece of legislation governing the health sector, the Public Health Act of 1975, was revised in 2001. The Public Health Act established the role of the MOH and its core function. Updates to the Medical Registration Act, Mental Hospitals Act, Public Hospitals (Management) Act, and the Registration of Nurses and Midwives Act were also made in 2001. In 2003, the Pharmacy Act established the Pharmacy Council with a mandate to regulate the pharmaceutical sector. The Health Practitioners Act (2006) sets requirements for licensing and practice for doctors and dentists, with the content of those requirements determined by the appropriate councils. Currently, a Mental Health Act was passed in 2008, which creates a community-based approach to mental health care. A key strength of the health sector is the up-to-date policy and regulatory framework that reflects the realities of the Saint Lucian health sector. Policy gaps remain, such as the need to formalize the referral system, to develop more clinical practice guidelines, to increase supportive supervision structures and to establish facility accreditation.

Public Hospitals (Management) (Amendment) Act, 2000

The Public Hospitals (Management) Act was passed in the St. Lucia House of Assembly in 1973 to make provision for the better management and administration of public hospitals.

Quarantine Act 2001

The purpose of this Act is to protect public health by taking comprehensive measures to prevent the introduction and spread of communicable diseases.

- Medical & Dental Practitioners
- Allied Health Practitioners

Of which, the Act scheduled twenty four (24) disciplines. The Act came into force in July 2009 after it was gazetted; thereafter, the Allied Health Council was established.

Pharmacy Act – 2003

This is an Act to establish the Pharmacy Council, to provide for the registration of pharmacists, pharmacies and authorized sellers of poisons, to regulate the supply of drugs and poisons to the public, and for related matters.

Health Services (Complaints and Conciliation Act) - 2001(Revised December 2006)

An Act to provide an independent and accessible review mechanism for users of health services, a means for reviewing and improving the quality of health service provision and for related matters.

Health Practitioners Act – 2006

An Act to provide for the registration and regulation of health practitioners and for the related matters.

The Health Practitioners Act was enacted in 2006 to regularize the functionality and registration of the Medical, Dental and Allied Health practitioners who may wish to practice in St. Lucia. The Act was divided into two parts:

Mental Hospitals Act – 2006 (Revised December 2006)
An Act to provide for the management and administration mental health hospitals for the provision of care and protection of the patient.

Medical Officers Act – 1966 (Revised December 2006)
An Act to provide for the conduct of Medical Officers operating in this jurisdiction.

Private Hospitals Act – 1966 (Revised December 2006)
An Act to provide for the licensing, administration and management of all privately owned hospitals and for related matters.

St. Jude Hospital Act – 2003 (Revised December 2006)
An Act to provide for the administration and management of the St. Jude Hospital and for related matters.

Mental Health Act – 2008
The draft Act provides for the care, treatment, and rehabilitation of persons who are mentally disordered; sets out different procedures to be followed in the admission of such persons; establishes a Mental Health Review Board; and provides for other related matters. Sections of the Bill are dedicated to: voluntary and involuntary admissions to the psychiatric facility; powers of a police officer and mental health officer; discharge of patient from the psychiatric facility; establishment of a psychiatric hospital; community mental health services; establishment of a mental health review board; appointment of an inspector of mental health care; treatment of patient; detention of patient; care and administration of property of mentally disordered persons; offences; and transitional and miscellaneous provisions.

Data Protection Act - 2011
An Act to make provision for the protection of individuals in relation to personal data and to regulate the collection, holding, use, processing, correction and disclosure of personal information in a manner that recognizes the right of privacy of individuals with respect to their personal information and for related matters.

Clinical Trials Act – 2015
The Act, is guided by international standards and jurisdictional processes such as, but not limited to, the Declaration of Helsinki, International Conference on Harmonization of Good Clinical Practice and the International Guidelines for Biomedical Research Involving Human Subjects. The scope of the Act includes interventional as well as non-interventional studies for both

medicinal products and medical devices. These studies are expected to be either pre- or post-marketing approval surveillance or Phase IV pharmacovigilance studies.

The Ministry of Health is responsible for the administration of the provisions of the Act and may amend the Regulations in its discretion, in order to adapt to technical progress and possible international regulatory developments in the area of clinical trials, as delineated in Part I of the Act.

Part II of the Act covers the procedures related to interventional studies. It makes provision for the review of application dossiers by both the Ethics Committee and the National Competent Authority whose review functions are different. While the Ethics Committee is expected to review from an ethical point of view, the National Competent Authority is responsible for reviewing from a procedural, scientific, policy and technical perspective. While differing in functions, both bodies are expected to be guided by the established international standards and jurisdictional processes for clinical trials. It must be noted that the Clinical Trial Act does not negate the function of the Ethics Committee which is responsible for ensuring the protection of the rights, safety, dignity, well-being and confidentiality of research subjects and to provide public assurance of that protection by reviewing study applications to determine whether a favourable opinion is warranted for the study application.

The legislation also makes provision for insurance. It stipulates that all applicants must ensure that proper no-fault insurance and compensation mechanisms are instituted as part of the study procedures to address damages, injury or death suffered by the trial subject as a result of participation in the clinical trial. In addition, provisions have been made in the Act to ensure that all clinical trials are registered. The Ministry of Health will be responsible for instituting and maintaining the registry, while ensuring that trial subjects' confidentiality is maintained and protected through anonymization of the data.

The Act does not place restrictions on the applicants for clinical trials; however it speaks to the confirmation of qualified investigator and suitable trial site. All applications are to ensure documentation that identifies qualifications and information relevant in assessing the suitability of investigator(s) involved in the study.

Millennium Heights Medical Complex Act – 2015

An Act to provide for the establishment of a Millennium Heights Medical Complex to be responsible for the administration, management and overall organization of the Owen King EU Hospital (formerly the Victoria Hospital), the National Mental Wellness Centre and the Turning Point Rehabilitation Centre, in an efficient manner. This Bill contains provisions that seek to provide greater autonomy to the Board in the administration of the institutions under its control.

Bills currently before the Attorney General's Chambers

- *Health Records Bill 2015*

5. Environmental Health

Vision: To be the most visible, effective, efficient preventative Health Service in Saint Lucia

Mission: To improve the quality of public health through the delivery of Environmental Health Services and the promotion of Sustainable environmental management strategies.

5.1 Performance Report

The Department of the Environmental Health is predominantly a regulatory agency with most of its functions being enshrined in the Public Health Act Cap. 11.01 of 2001 (revised) and its eleven enabling regulations. The role of the Department is also defined by the numerous international agreements and protocols regarding public health and environmental protection to which Saint Lucia is a signatory.

The Department through its four programmes seeks to achieve two broad objectives that are in keeping with those of the WHO.

To achieve safe, sustainable and health-enhancing human environments, protected from biological, chemical and physical hazards, and secure from the adverse effects of global and local environmental threats.

To facilitate incorporation of effective health dimensions into regional and global policies affecting health and environment, and into national development policies and action plans for environment and health, including legal and regulatory frameworks governing management of the human environment.

The activities to the Department of Environmental Health can be subsumed under the following sub-programmes:

Water Quality Control & Waste Water Disposal

The provision of an adequate supply of safe water is of paramount public health importance and can never be over emphasized; its impact on health is profound and is both direct and indirect. The direct impacts are related to quality of water utilized, (in particular water, which is consumed,) and water reintroduced to the environment through means of treatment processes (effluent). Thus, surveillance is conducted to evaluate the suitability of the water supplied to the public with the ability to implement mitigative actions to alleviate any potential hazard.

The objective of this programme is to ensure that drinking and recreational water meets WHO standards and to reduce human exposure to untreated liquid and solid waste.

The Department's compliance and monitoring programme covers the number of water quality analyses conducted, the number of water trucks inspected and licenced, the number of water bottling plants inspected and licensed as well as the sanitary surveys conducted.

The Department's performance targets include 1,655 samples tested for chlorine residual island wide, 15 Public water supplies inspected (sanitary Survey), twenty (20) Water trucks inspected and licensed. Five (5) water bottling plants inspected and licensed and One Hundred and Twenty (120) water samples tested for microbes. The results achieved to date are 3,025 samples analysed for chlorine residual of which 92% had acceptable chlorine with 8% recording no chlorine levels. Twenty (20) water trucks were inspected and licenced, Two (2) sanitary surveys conducted and One Hundred and Twenty (120) samples analysed and tested negative for microbes.

As it relates to the Department's waste water, the performance measure include the public health surveillance of waste water treatment systems, solid waste management systems and investigation of public health complaints. The performance target as set by the Department include the assessment of Two (2) municipal sanitary landfills, and the investigation 100% of complaints received as well as the assessment for compliance with Public Health requirement of 100% of registered sewage treatment plants.

The results achieved by the Department include the inspection of 1 sanitary landfill, out of the Four Hundred and Twenty Five (425) complaints received 100% was investigated.

Food Safety

The mandate of this programme is to reduce exposure to unwholesome foods and risk of transmission of Food Borne Illnesses. Food products and food premises are assessed and regulated for compliance with public health standards. The measures used for performance include the number of food premises inspected and licenced and the amount of food products inspected and tested. The performance targets as set by the Department include Three Hundred and Ninety Three (393) premises inspected and licenced and wholesome foods passed while unwholesome foods condemned. The results achieved for the period include Six Hundred and Seven (607) food premises inspected and Three Hundred and Six (306) food premises licenced. Forty (43) other non-food premises licensed. One Thousand Four Hundred and Ninety One (1,491) locally processed animals inspected for wholesomeness; Five Hundred and Fifty Five Thousand, Seven Hundred and Three (557,703.87) lbs of unwholesome foods were condemned and disposed.

Percentage of food premises licenced, 50.4% while remaining 49.6% are unlicensed out of the number inspected. Percentage inspected from the total registered (1744) is 34.8% leaving a percentage of 65.2% of not inspected. There was 17.5% licenced overall.

The projected revenue for the Department is $309,501.73. The actual revenue collected is $171,061.01 which amounts to 55% of the projected.

Vector Management

Vector management aims to mitigate the serious threat of disease outbreaks (Dengue Fever, Leptospirosis, West Nile Viruses infection, Schistosomiasis) spread by vectors which are present on the island at levels which can support an outbreak. Social factors such as the insanitary management of solid waste at the household level as well as the municipal level further exacerbates the risk of vector borne disease.

The objective of the Vector Management programme is to reduce the indices of vectors and the risks of vector-borne illnesses among residents and visitors.

It is expected that the vector indices will be reduced in selected communities to a safe level (Breteau index <5%, Household Index <1%). The performance measures will be undertaken through entomological surveillance and intervention at high risk areas and rodent surveillance and control measures applied in selected communities. Targets to be achieved include national breteau index reduced by 1%, national household index reduced by 1%, rodent population in 2 communities reduced and 2 assessments/inspections of 4 points of entry conducted fortnightly.

The results achieved include premises inspections conducted in 58 selected communities with high indices, 11 assessments of airport conducted – Hi: 5.26%, CI 22.22%, BI: 21.05%, 11 assessment of seaport conducted – HI: 0.00%, CI:0.00%, BI:0.00%, 54,509 premises inspections conducted island wide -- HI:15.12%, CI:16.17%, BI:26.24, 23 health education sessions held at 21 selected venues, 4 PSA's produced in collaboration with BHE, 10 radio programs held, 37 vector borne complaints investigated. A total of 7 clean-up campaigns were conducted (Rodney Bay, Garden Groove, Morne Repos, La Ressource, Canaries village, Ciceron) and 15,789 eggs sent to CARPHA (mosquito resistance testing).

Port Health

The expansion of international travel and trade has been cited as a primary cause for the global transmission of emerging and re-emerging infectious diseases. Recent epidemics of SARS, Avian Influenza virus infection, Norwalk virus and H1N1 virus infection across continents have taken a significant toll on humans by way of death and disease and a severe economic cost impact as a result of their direct impact on the productive sector (e.g. tourism). As a result there is a heightened awareness worldwide for Port Health Surveillance Systems as a strategy for mitigating international threats to public health.

The objective of this programme is to protect nationals and visitors to Saint Lucia from International threats to Public Health through public health surveillance at ports of entry. There will be monitoring of ships for sanitation control certificate, inspection of Port facilities, food premises and foods at points of entry. Pratique will be granted to conveyances (vessels and aircrafts) and there will be approval of human remains entering Saint Lucia.

The performance targets as set by the Department include 25% of vessels inspected for sanitation control certificate, pratique granted to 50% vessels and 20% aircrafts based on scheduled arrival into St. Lucia, two inspections of port and port facilities conducted at six points of entry and examination of 100% human remains transported into Saint Lucia.

The results achieved include 5,376 vessels granted pratique (327 Cruise Ship, 2,232 yacht, 2,788 aircraft, 18 ferry and 11 cargo ships), 33 human remains application processed and remains examined and 78 illnesses investigated. There was also the re-introduction of Port Health Surveillance at the 2 airports, 7 nurses employed at airports, 5,376 (100%) of health declarations reviewed and processed, 1 consignment of food (40 Foot container contamination by live raccoon) and 50,800 lbs flour condemned, 2 assessments of port facilities conducted and protocols were developed with respect to granting pratique to conveyances and decontamination for EVD.

Building Development

This programme is within the Waste Water Programme and the objective of this programme is to regulate development plans for compliance with Public Health Standards.

This performance is measured by the number of plans reviewed and processed by the Department. The target is 100% of development plans processed within 31 days.

The Department's results achieved for the period are 488 development plans received and 488 development plans processed. The type and number of plans registered and processed are listed below:

Residential - 345
Swimming pool - 5
Apartment House -11
Commercial - 97
Sub division - 10
Institutional - 13
Industrial - 1
Burial Sites - 1
TOR for EIA – 6
Total = 488

For the same period, the Department's revenue generated amounted to total revenue collected $51,150.00. Exempted Fees amounted to $1550.00.

5.2 Issues, conclusions and recommendation for the future.

Human Resource

There are a significant number of staff without the required capacity to perform effectively. A number of obsolete positions on the structure (Litter Wardens, Maid, Foreman 1-11 and Senior Operator) makes it difficult to work with. Though there are numerous approved positions, they

are not funded. The low grading of the Department positions relative to similar departments in the Public Service is yet another issue. Of concern to the Department is the inadequate systems for employees who require special support and inefficient and ineffective system for discipline.

Operational

In terms of operational aspects, there exist within the Department a lack of basic equipment and furniture (computers, conference room tables, desk and chairs etc.). There are inadequate telephones (mobile). The inability to efficiently and effectively enforce compliance with Public Health legislation. Also, there is a lack of compensation for officers who are required to work extended hours and our inability to respond effectively to increasing burden of Occupational Health and Safety issues (communicable and non-communicable illnesses).

Strategic

Currently, an antiquated organizational structure with antiquated roles and responsibilities in a changing environment exist. There is a lack of Information Management capacity to support critical functions (planning and evaluation, policy formulation, projections, assessment of risks, education and mobilization). The lack of an environmental policy is a major issue, archaic legislative framework, lack of an effective regulatory and enforcement framework and inadequate capacity to effectively plan and respond to the effects of climate changes (disasters etc.).

Recommendations for the future

The Department needs to develop and implement a National Environmental Health Policy to give strategic direction to the Department of Environmental Health now and for the future. There is need to review and modernize the Department's structure and to conduct a manpower audit and job analysis to support the redefinition of roles. The support for health education needs to be strengthened as well as the strengthening of the Information Management Capacity. Decentralize/support regionalization of services. Training in selected areas such as project management, proposal writing, and communication are needed. A review and modernization of legislation to deal with current issues while strengthening the regulatory and enforcement framework (Public Health Board, Environmental Court, and Legal Services etc.) are necessary.

There is a need to establish a system for compensation of officers performing critical functions outside of regular work hours. The appropriate physical plant, furniture and equipment should be provided to facilitate a level of workplace comfort. There must be a system whereby laboratory and field based testing capacity to support the Department's programmes as well as quality management should be strengthened. There should be increased capacity to respond to Occupational Health and Safety issues and to be able to mitigate the effects of climate change (disaster planning and response).

6. Issues, Conclusions and Recommendations for the Future

Summary

The mortality burden and the premature mortality burden of CNCDs were disproportionately high for Saint Lucia in 2013-2014. CNCDs represented 58% of premature deaths, 73% of total preventable deaths when infant mortality was excluded, compared to a global average of less than 50%. Adding urgency to the CNCD debate is the likelihood that the number of people affected by CNCDs will increase substantially in the immediate future if urgent action is not taken. One reason, is the interaction between two major demographic trends observed in this report. The Saint Lucia population is increasing; although the rate of increase has slowed due to lower fertility rates, UN projections indicate that Saint Lucia's population will grow by 21% by 2050. In addition, the proportion of those aged 60 and older has begun to increase based on the demographic shifts observed from 1990 to 2014, and is expected to grow very rapidly in the coming years as populations live longer. The demographic trends and projections support the UN estimations for Saint Lucia that indicate that by 2050 persons aged 60 and older will represent 33.3% of the total population in 2050. Since NCDs disproportionately affect this age group, it can be expected that the incidence of these diseases will accelerate in the future. Increasing prevalence of the key risk factors such as obesity, physical inactivity and poor diet, presented in this report will also contribute to the urgency, particularly as globalization and urbanization take greater hold in the developing world. The Ministry of Health, remains committed to creating a supportive environment that builds individual resiliency and skills to make appropriate informed choices that would result in sustained behavioural change; working with other policy makers to ensure that healthy choices are the easiest to make.

Communicable diseases, also known as infectious diseases, which can be transmitted directly or indirectly from one person to another, or from an insect, environmental or animal source to a person, continues to be challenge to the health sector. While two thirds of emerging infectious diseases (EIDs) result from zoonoses, in the Caribbean region we have seen increased risk for vector-borne EIDs in our populations. In 2014, Saint Lucia experienced its first Chikungunya virus outbreak in what was an immunologically naïve population. Like the rest of the Caribbean, we continue to encounter challenges with the control of mosquito populations, including the Aedes aegypti which is the vector responsible for transmission of Chikungunya virus as well as dengue. Therefore while some communicable diseases may be preventable through immunization, others, like chikungunya and dengue as well as other potential arboviral diseases, are best avoided through risk-reducing behaviours that requires collaboration with civil society.

What is most noteworthy, is that the emergence of chikungunya in Saint Lucia, indicates the dynamic evolution and interaction of microbes and risk factors underlying the determinants of health. The interaction of economic trade and travel, and its role in the transmission of vectors and infectious agents needs to be reviewed and policies reinforced and implemented. The International Health Regulations (IHR) (2005) presented Saint Lucia with an opportunity to

provide a public health response to the international spread of disease, reducing public health risks without compromising international trade or travel. Saint Lucia has made some achievements in IHR which it has used to strengthen systems for communicable diseases. Some of the main achievements during this review period has been;

- development and implementation of a work plan for strengthening IHR capacities,
    - strengthening of all capacities, with the exception those regarding CBRN events
- identification and assignment of National Focal Point for IHR and Coordinator for implementation of IHR activities,
- review/assessment of existing legislation and drafting of new legislation to facilitate IHR compliance,
- establishment of two (2) Points of Entry,
- training of relevant staff in field epidemiology and,
- establishment of Outbreak Investigation Teams in all health regions;

This iteration of the CMO's report showed gender disparities in the health burden in some key areas. There are new trends being observed in the transmission of HIV, with incident cases highest and increasing among young males 25-49 years. There is a need to better understand the influencing factors of this trend. It underscores the urgent need for governments in partnership with civil society to work with young persons, especially the young males, on effective prevention, treatment and care strategies for them and reinforce safety and risk-reduction behaviours in our youth. It would require an unparalleled political commitment to ensure the financial and human resource capacity to respond.

Mortality data, which was the most reliable and widely available data showed distinct gender disparities that were larger than age group disparities. Excess male mortality existed in manner of death, cause of death, and within and age groups. In addition the gender disparity was greater (5 times more) in external causes of mortality to include unintentional and violence-related injury mortality. With the rare exception of cancers, premature mortality was highest for males across all broad groups when compared to females. Whether the same pattern of findings applies to nonfatal causes of ill health remains to be seen and would require some further research and analysis.

When considering the risk factors, poorer outcomes were observed in females compared to males, yet mortality is higher for male than for females for diseases with these associated modifiable risk factors. However alcohol use remains the exception in risk factors. Research has shown that alcohol consumption is common in both unintentional injury and violence-related mortality. The STEPS survey (2012) indicate that men consistently exceed women in typical drinking frequencies and quantities, as well as in rates of heavy drinking episodes, consistent with other country surveys that have been done. In addition, male gender is the largest predictor by far of driving under the influence. There is a need to collect addition information on risk factors for injury as well as other cause related mortality and morbidity.

Whether the focus is on injury or on health disparities, a greater acknowledgment of the pervasiveness of gender disparities in injury mortality would benefit prevention efforts. Public health attempts to change lifestyle and behaviour with population-level interventions, (e.g., comprehensive campaigns to prevent and reduce tobacco use, policies and programs designed to change diet and activity patterns to reduce obesity). Greater effort should be invested in modifying masculinity-linked behaviour. Gender-based risks are, in principle, amenable to social change, and they offer untapped potential for health interventions.

Data Sources

The 2013-2014 CMO's report for Saint Lucia and the methodology employed has allowed the Ministry of Health to identify the strengths and weaknesses of the existing health information systems. The actual feasibility of the project was as a consequence of robust mortality and hospital discharge data, used as a proxy measure of morbidity, and which has been coded using ICD-10 that facilitates comparability of findings. As with other health status reports and disease burden studies, an area of coding that can be improved, but that would require working with the clinicians who complete the death certificates, is the allocation of deaths to ill-defined causes so as to minimize the need to reallocate deaths to more specific codes. Future reports will be informed by on-going health surveillance through regular health and wellbeing surveys, monitoring of health related databases and disease registries that will provide current and reliable data on the prevalence of diseases and their associated behavioural risk factors.

Limitations

The data from this report reflects what is seen and captured in the public sector. This recent iteration of the CMO's report has revealed some data deficiencies, for both fatal and non-fatal conditions. It highlights the need to review the completion of the death certificates to provide information of comorbid conditions and disease sequealae as well as additional socio-demographic data for more detailed analyses. The Ministry of Health needs to review the capturing of non-fatal conditions especially, musculoskeletal disorders, reproductive disorders, dementia, vision loss, hearing loss, dental problems, skin disorders, gastrointestinal disorders and infections. Improving the comprehensiveness of such conditions, sequelae (health states) and risk factors will be important for future studies to inform policy decisions. In addition, data on risk factors will facilitate additional analysis when determining the proportions of the burden of disease attributable to risk factors, using the population attributable fraction (PAF) method. This version of the CMO's report, while desirous in employing this method, was unable to do so due to limitations in the level of disaggregation of available data. It would have allowed the Ministry of Health to determine the proportion of the burden for disease interest that could be avoided if a particular risk factor was absent in the population. Such information is critical to advise policy

makers on the need for additional investments in health; demonstrating the need to incorporate the participation of non-health actors, linking the gains with interventions and the social determinants of health (SDH).

While the CMO's report was able to incorporate a measure of regional analysis that will better inform regional planning and resource allocation, there is a need to extend the analysis to capture the deprivation quintiles, or other measure of socioeconomic position, which was a challenge in this iteration. While we are able to measure some aspects of individual health, it is vital that we consider measuring community health as well as include other aspects of community that impacts health, but is not measured in this iteration of the CMO's report. Currently, health data is heavily diseased focused and future considerations for data in the health sector should also seek to capture wellness data that would be valuable and informative. Given the limitations of current health data, there is a need to balance it with qualitative data to understand the why. It is expected that through health education, partnerships and building on common values, we will build a sustainable quality system of services that is responsive to our health situation.

Nothwithstanding the fact that the report has highlighted some data deficiencies, it has also shown that Saint Lucia is relatively well off in terms of health information as it relates to the completeness of its mortality database, making it possible to carry out a relatively robust burden of disease study and health situation analysis for the sector that has informed the CMO's report.

Conclusion

The growing evidence of epidemiological and economic impact necessitates a national response to the health situation. There is a need for better evidence about risk factor control, a reorientation of the health system to chronic care management and a concerted, strategic, and multisectoral policy approach, underpinned by solid research, to help reverse the negative trajectory for the premature mortality burden of chronic disease.

The mortality data reinforced that there are important biological and behavioural differences between the two genders. They affect manifestation, epidemiology and pathophysiology of many widespread diseases and the approach to health care. In light of the evidence presented here, there is a greater need for gender-specific health care; the prevention, management and therapeutic treatment offered within the sector should reflect the most obvious and most important risk factors for the patient: sex and gender. The approach must consider both the sociological aspects and biological factors as it seeks to improve the health of men and women.

The results from this report provide powerful input for policy actions when combined with information about efficacious, cost-effective interventions.

Ministry of Health and Wellness
Saint Lucia
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