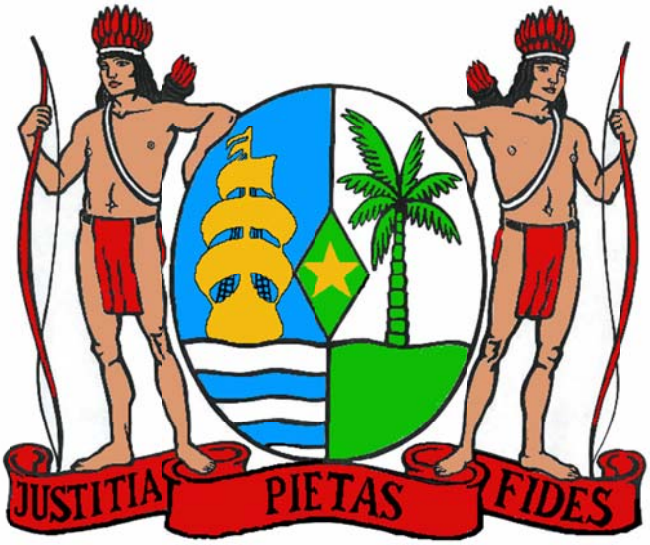

PAHO/WHO

COUNTRY COOPERATION STRATEGY

SURINAME 2012- 2016

November 2012 | PAHO SUR

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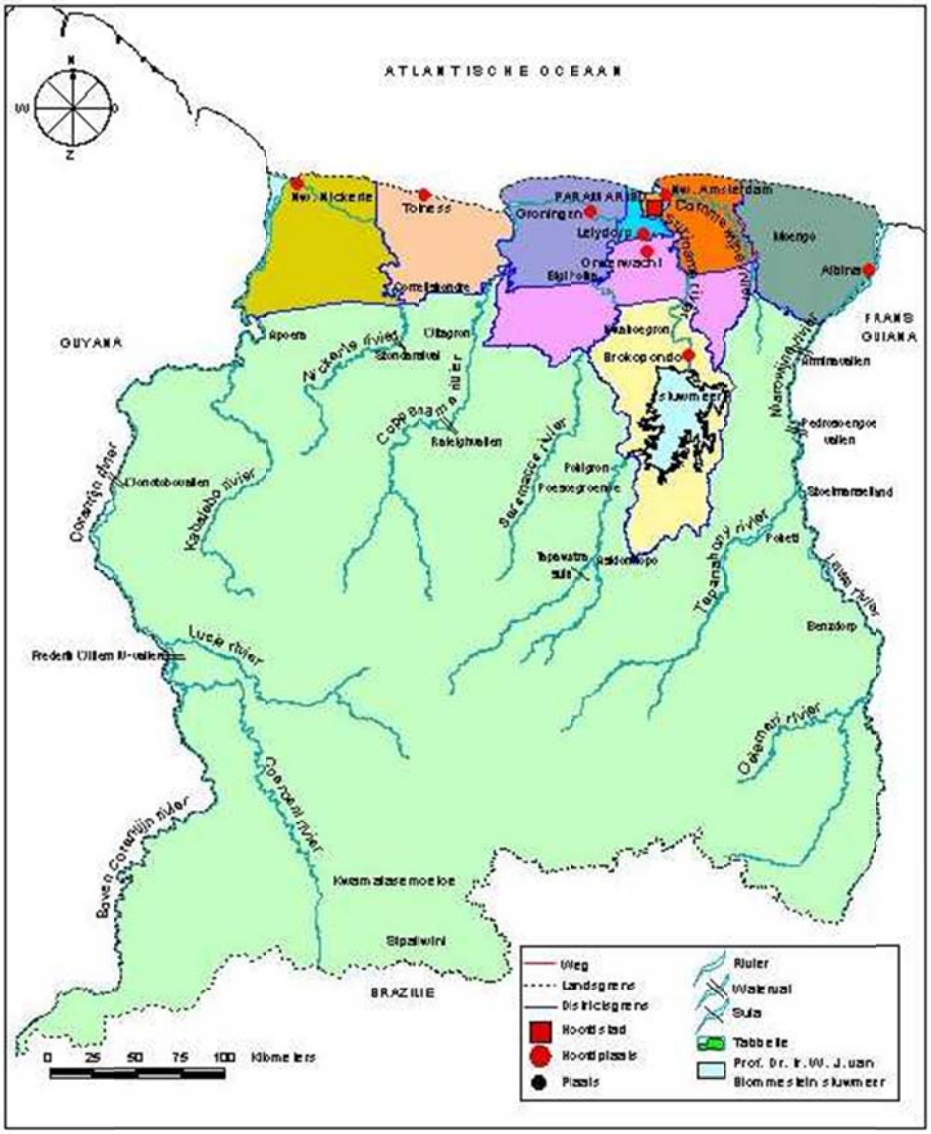
FIGURES

Map of Suriname



This map does not reflect a position by the UN on the legal status of any country or territory or the delimitation of any frontiers.

Signature Page

Government of Suriname	**PAHO/WHO Suriname Country Office**
H.E. Drs. Michael Blokland Minister of Health of the Republic of Suriname	Dr. Guillermo Troya Representative, Pan American Health Organization/ World Health Organization (PAHO/WHO)

Table 1: Basic Data on Geography, Population, Economic Sectors and Forms of Government.

Location	Northern South America, bordering the North Atlantic Ocean, between French Guiana and Guyana	
Area and topography[1]	163,820 sq km mostly rolling hills; narrow coastal plain with swamps	
Total Population, mid-2009 estimate[1]	524,143	
Population 0-19[2]	198,028	
Population per sq. km[1]	3.2	
Life expectancy[2]	69.8 years (71.9/67.7 women/men) (2008)	
Climate	Tropical; moderated by trade winds; two rainy seasons	
Main towns	Paramaribo (capital), Nieuw-Nickerie, Albina	
Main economic sectors[3]	Industry and manufacturing 19%, Mining 11%, Wholesale and Retail 11%, Transportation and Communication 9% (2004)	
Major export partners[4]	Canada 35.1%, Belgium 14.7%, US 10%, UAE 9.8%, Norway 4.9%, Netherlands 4.7%, France 4.4% (2009)	
Major import partners[4]	US 30%, Netherlands 18.7%, Trinidad and Tobago 12.7%, China 7.6%, Japan 5.7% (2009)	
Ethnic groups[5]	Hindustani – 27.4% Creole – 17.7% Maroon – 14.7% Javanese – 14.6% Mixed – 12.5% Indigenous – 3.7%	Chinese – 1.8% White – 0.8% other – 0.5% unknown – 6.6%
Religions[5]	Christian – 40.7% Hindu – 19.9% Islam – 13.5%	Other – 10.2% Unknown – 15.7%
Languages	Dutch (official), Sranan Tongo (Surinamese), Sarnami (a dialect of Hindi), Javanese, Chinese, Portuguese, English and a number of Maroon and indigenous languages	
Form of government	Constitutional democracy	
Next election	2015	

Sources: 1) Suriname, General Bureau of Statistics. Statistical Yearbook 2009. Paramaribo. 2010.; 2) General Bureau for Statistics. Statistical Yearbook 2008. Paramaribo; November 2009.; 3) General Bureau for Statistics. Statistical Papers 6. Paramaribo; June 2008.; 4) Central Intelligence Agency. The World Fact Book: Suriname [Internet]. [Updated July 5, 2011, cited August 11, 2011]. Available from https://www.cia.gov/library/publications/the-world-factbook/geos/ns.html.; 5) Suriname, General Bureau of Statistics. The Seventh Population and Housing Census 2004. Paramaribo. August 2005

EXECUTIVE SUMMARY

The Country Cooperation Strategy for Suriname 2012-2016 (CCS) is the planning mechanism for the PAHO/WHO Country Office in Suriname (CO), which states the aligned regional and global strategic orientations and priorities along with the jointly agreed upon priorities. The CCS outlines the main health priorities (Section 2) and captures the outcomes of the dialogue generated by the CCS process (Sections 3 and 4). Based on these elements, the CCS presents the strategic agenda for PAHO/WHO cooperation (Section 5) and reviews the added value contributed by all levels of the Secretariat to implement this agenda (Section 6). This document is the first CCS to be signed between the Ministry of Health and PAHO/WHO in Suriname and will foster current and future health achievements through successful implementation.

Health Priorities

Similar to global trends, the shift from a high communicable disease burden towards an increasing burden of non-communicable diseases is apparent. The country is in the midst of a national non-communicable disease epidemic as cardiovascular diseases, cancers and diabetes have been the main causes of death for years; this is expected to continue as lifestyle and behavioural risk factors including tobacco use, alcohol abuse, unhealthy diets and physical inactivity are frequent. This epidemic also accentuates the heightened significance of other health conditions (specifically mental health, injuries and violence), and emphasizes the need for integration of disease-specific programs into primary health care.

Even with an ongoing epidemiological shift towards non-communicable diseases, some communicable diseases, such as HIV, tuberculosis and dengue are still a concern. Furthermore, the Ministry of Health has committed to the elimination of neglected tropical diseases (chagas disease, leprosy, leptospirosis, schistosomiasis, soil-transmitted helminths). Ongoing efforts are needed to build on the successes related to communicable diseases, specifically related to integrating vertical programs into primary health care, where appropriate.

Establishing a continuum of care approach to family health that integrates programs for different stages of life is important to achieve optimal health over the life course. Priorities are clear at each stage of life, such as reducing infant mortality, decreasing vaccine preventable diseases in children, investing in protective factors in adolescents and youth, improving maternal health and decreasing mortality rates by further increasing the percentages of deliveries attended by skilled health personnel in all parts of the country, and improving the health of the elderly.

Improving the integration of vertical programs into public health care is needed to strengthen health systems and services. The Primary Health Care model emphasizes empowering frontline primary health care workers to increase outreach for prevention and early diagnosis, as well as reinforcing the referral system to reach all levels of treatment, prevention and care. This model offers many programs to increase coverage, reduce inequalities and promote efficiency and effectiveness including strengthening health planning and health services, optimizing health financing, establishing an optimal mix, number and distribution of human resources for health and supporting the increase and use of health information.

Underlying the previously stated priorities, addressing the determinants of health is of tremendous importance as they are the fundamental causes of poor health and they intensify health inequalities. Global, regional and national changes, increased environmental health threats, living and working conditions, and emergencies, disasters preparedness and response require strengthening national capacities to address these priorities. These determinants are quite complex and they are largely

overlooked despite their significance; therefore, it is necessary to advance on the social determinants of health agenda.

Outcomes of the Dialogue Generated by the CCS Process

In addition to the identified health priorities, determining the strategic agenda was also based on the positioning of PAHO/WHO as related to the role of other development cooperation partners and a review of PAHO/WHO cooperation in the past.

Historically, the Netherlands was the principal development partner in Suriname and provided a significant amount of resources. In recent years, considerable changes have occurred and there is now a heightened presence of other development partners. This increase requires strong platforms and mechanisms for coordination for aid effectiveness. The strategic positioning of the country office will enable the Organization to play a lead role in the coordination of donor partners to facilitate championing health in all policies.

In the absence of a signed CCS, strategic dialogues were conducted to review previous PAHO/WHO performance. Reviews with stakeholders found that the technical cooperation provided by PAHO/WHO was strategic, relevant, timely, and strongly aligned to national priorities. Additionally, an internal review among staff found many strengths and opportunities, including that the office was a strong development partner that occupies a lead role in providing technical cooperation on heath. Challenges identified were mainly related to limited human and financial resources and the evolving leadership and governance role of national counterparts.

PAHO/WHO Strategic Agenda (2012-2016)

The centerpiece of the CCS strategic agenda is the introduction of comprehensive primary health care based on the integrated management approach. Comprehensive primary health care is considered the most sustainable and equity-enhancing mode of health care delivery system. This is highly applicable for the country as inequities remain and there is a high demand for integrated approaches to care. Three strategic priorities are established:

- **Reducing the burden of disease:** Reducing the burden of both non-communicable diseases and communicable diseases; strengthening community-based mental health; enhancing family health over the life course; reducing violence and injuries.
- **Strengthening health systems and services based on primary health care:** Strengthening health planning and health services; optimizing health financing, enhancing human resources for health; increasing the strategic production and use of health information.
- **Addressing the determinants of health:** Strengthening national response to environmental health threats; strengthening capacity and coordination to address workers' health; improving the management of emergencies and disasters; advancing on social determinants of health.

The strategic agenda continues to uphold the core values of PAHO/WHO of equity, excellence, solidarity, respect and integrity, while implementing both core and cross-cutting functions of the Organization. Full implementation of this strategic agenda and appropriate response to country priorities requires full coordination between all levels of the Organization to reinforce the strengths and respond efficiently to the needs of Suriname.

1. Introduction

In 2003, the World Health Organization, through the Executive Board, initiated the development of Country Cooperation Strategies as part of its country focus policy. The purpose of this Country Cooperation Strategy (CCS) is to articulate a medium term strategic framework for the Pan American Health Organization/World Health Organization (PAHO/WHO) technical cooperation with and for Suriname. The CCS reflects the agreement between the national authorities and PAHO/WHO as to the specific priority areas that will be the focus of the technical cooperation program in Suriname. It incorporates all levels of the Organization and all appropriate institutions within PAHO and WHO, for a "one country plan and budget".

The CCS also considered the relevant mandates of PAHO/WHO, guided by the Organization's commitment to principles of equity and Pan-Americanism that ensure a focus on the health needs of the most vulnerable population groups in the country and the Region.

Suriname has been rated a middle-income country by the World Bank, and therefore is not a candidate for development assistance in the traditional sense. The country has demonstrated a concerted commitment to share its expertise and has played an active role as a PAHO/WHO Member State in the health development of the Region. Any role for PAHO/WHO must demonstrate these commitments through the strategic agenda set forth by the CCS.

The work of PAHO/WHO at the country level is defined within the framework of global, regional, and sub- regional directives, and the national health development priorities of the specific Member State. The overall objective of the CCS is to set the medium-term vision of the Organization's technical cooperation in support of the country's development, and serve as the main instrument for harmonizing the Organization's technical cooperation with other UN Agencies and development partners.

The preparation of this CCS began after the 2010 elections in Suriname. The CCS Mission and consultation process took place 14 to 18 February, 2011 and was facilitated jointly by a team consisting of PAHO/WHO technical staff in Suriname; Beverley Barnett, PWR Guyana and Oscar Mujica, Rony Maza and Marijke Velzeboer-Salcedo from PAHO/WHO Washington Office. The development of the CCS began with an internal review of the documentation and discussion of the CCS process. Discussions with stakeholders provided input for the development of the CCS, through structured discussions and exercises to inform and support the final drafting of the strategic agenda of the CCS. The stakeholders were the Ministry of Health, the Medical Mission, the Regional Health Services, and the following Ministries: Agriculture, Fisheries and Husbandry, Labour, Natural Resources, Education, the Environment, as well as the international cooperation and development agencies UNICEF, UNFPA, IICA, USA Embassy, Brazilian Embassy, Indonesian Embassy and the European Union delegation to Suriname.

During the technical discussions and exercises the three strategic priorities were adopted: 1) reducing the burden of disease, 2) strengthening health systems and services based on primary health care and 3) addressing determinants of health. These were further classified into 14 main focus areas through which the strategic response will be delivered.

These Strategic Priorities were developed while considering the importance and significance of fragmentation and inequities inherent in the determinants of health in Suriname. Fragmentation within the health system intensifies systematic inequalities. Successfully responding to these priorities requires diligence in addressing these inequalities and fragmentation.

The strategic agenda accentuates the essential role of PAHO/WHO as a principal development partner, and its role within the UN System as a leader in shaping the health agenda. This has significant implications for the entire Secretariat. PAHO/WHO's added value in Suriname lies in the Organization being a catalyst for advancing the health agenda and providing technical cooperation for upstream policy levels.

The implementation of the strategic agenda requires the continuation of PAHO/WHO's role as a trusted broker, which will enable the facilitation of partners' contributions towards national health policies, strategies and plans.

2. Situation Analysis

2.1 Macroeconomic, Political and Social Context

Political and Governance Structure

Suriname, a former Dutch colony, became an independent republic in November 1975. The political system is a constitutional democracy using a one-chamber proportional representation system with 51 seats. The members of all legislative bodies (National Assembly, District Councils and Local Councils) are elected simultaneously for a 5-year term. After members are installed, the National Assembly elects the President and Vice-President. Below the national administrative level there are 10 District Councils, and at the sub-district level there are 62 Resort Councils.

Since the 1987 elections, individual political parties frequently form pre-election coalitions named 'political organizations', and then enter elections under the same banner. This contributes to the political complexity in Suriname because individual parties have the increasingly exercised liberty to move between coalitions. Additionally, these coalitions are often formed on the basis of ethnicity or carefully balanced coalitions of parties of different ethnicities, rather than political agendas or ideology (left, right, or center).

During the May 2010 general election, only one individual political party (DOE) and four political organizations participated (Nieuw Front, Megacombinatie, Volksalliantie, and A Combinatie). Megacombinatie won the most seats (23), yet failed to get the majority of parliamentary seats (26) as the Nieuw Front, Volksalliantie, and A Combinatie won 27 seats combined. Jennifer Simons, Vice-Chairperson of the National Democratic Party (NDP) was elected the Speaker of the Assembly, causing A Combinatie and Volksalliantie to move to Megacombinatie, now a mammoth coalition (3 political organizations, consisting of a total of 11 individual political parties).

Desire Bouterse, NDP Leader (Megacombinantie's nomination) and Robert Ameerali, Chair of the Chamber of Commerce and Industry (A Combinatie nomination) won the position of President and Vice-President with 36 of 51 votes in the National Assembly on August 19, 2010. Many members of the new National Assembly are relatively new: 31 of the 51 parliamentarians (60.8%) are first-time members. Only 5 of the 51 parliamentarians (9.8%) are women, down from 20% in previous years.

With the new government, it is expected that there will be an emphasis on coordination with international and regional priorities. Correspondingly, the government is looking more to the regional blocks and entities beyond the Caribbean Community (CARICOM) like OTCA and UNASUR for cooperation and technical assistance. Health links with Brazil and French Guiana are growing while links with the Netherlands are weakening.

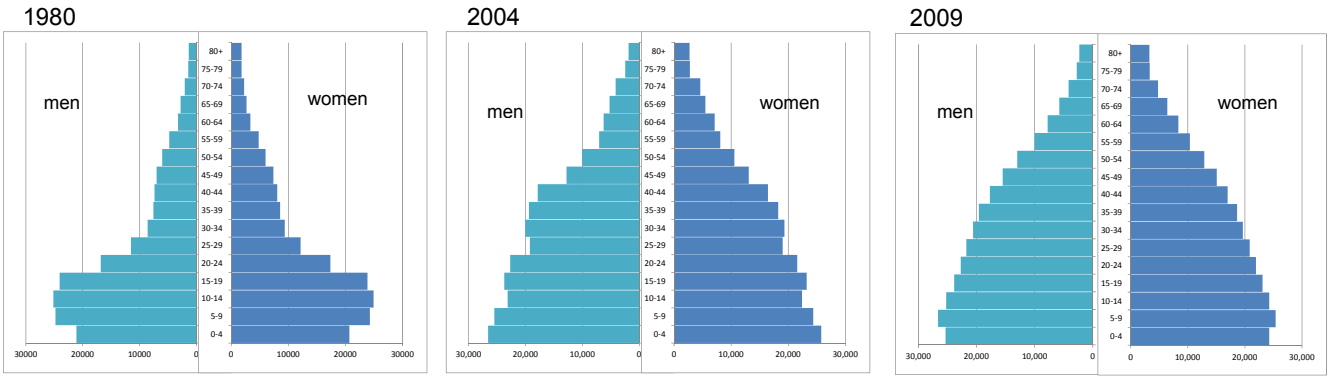
Under Article 36, the constitution of the Republic of Suriname states that everyone has the right to health and that the government has the responsibility to promote health by systematically improving living and working conditions and to give information on the protection of health *(6)*.

Demographic Profile and Population Characteristics

Suriname is in full demographic transition *(7)*, with moderate birth and death rates, decreasing fertility rates, increasing life span, and moderate-to-low natural growth. The mid-year population in 2009 was estimated at 524,143 *(1)* and the overall 2007 life expectancy at birth was 71.9 years for women and 67.7 years for men *(8)*. In 2008, the crude death rate was 8 per 1,000 and the crude birth rate was 19 per 1,000. The 2007 average total fertility rate was 2.4 births per woman *(8)*. The population annual growth rate was 1.3% in 2009 (up from 1.2% for 2006-2008).

This demographic transition is reflected in the remarkable change in population structure, which has taken place since 1980. With a shift from a pre-industrial society to an industrialized economy, the country's age structure has become less triangular and more stationary, revealing a decline in youth dependency and a rise in older age dependency (Figure 1).

Figure 1: Population Age-Structure, Suriname, 1980, 2004 and 2009.

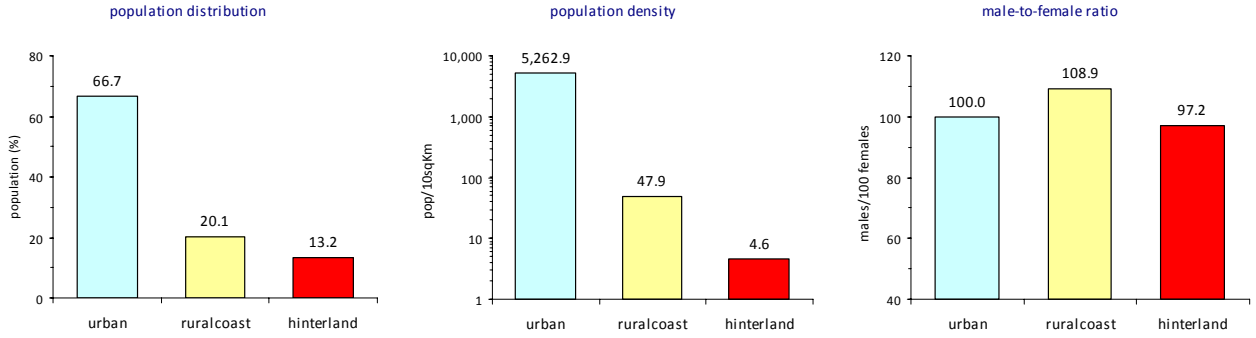


Sources: Demographic Data of Suriname. Central Bureau for Civil Affairs. N° 4; Feb 1997; General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004. Paramaribo, August 2005.; General Bureau for Statistics. Statistical Yearbook 2009. Paramaribo; November 2010.

This structural change in age-dependency may bring a demographic window of opportunity that can potentially generate economic growth through an increase in the ratio of working age to dependent population, the so-called demographic dividend. In this scenario, job generation and employment acquire particular relevance in public policy.

The last census, in 2004, showed that the dynamics of this demographic transition is concentrated mostly in the populous urban area of the country and, to a lesser extent, in its rural coastal area, whereas the rural interior still exhibits a pre-industrial demographic profile. A marked contrast among these 3 areas emerges when examining other demographic variables, such as population share, population density, and man-to-woman ratio, as illustrated in Figure 2.

Figure 2: Population age structure by geographical areas, Suriname, 2004.



***Source*:** General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004; August, 2005.

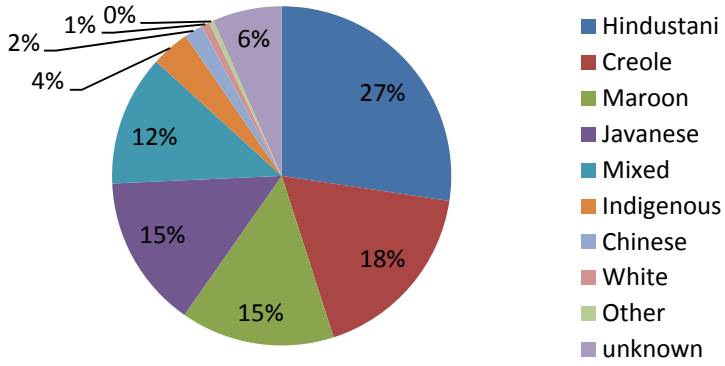
In addition to urbanization and aging, migration is another important trend in shaping the demographic dynamics and the population structure, particularly the segment under 30 years of age. In 2010, the net migration rate was -0.26 per 1000 people, illustrating an excess of people leaving the country *(4).* However, since the vast borders within the rainforest do not permit reliable controls, there may be a

considerable amount of illegal immigration, for instance from Brazil. Officially, internal migration rates have remained fairly stable, with major migration from the rural to the urban areas. These figures are based on official address changes and are therefore subject to under-reporting. No official estimates exist on the rates of unofficial internal migration.

Social Context

Suriname is one of the most ethnically diverse countries in the Americas, mainly because of the 17th and 18th century slave trade and bound labour from India, Indonesia and China. Currently, Suriname is composed of the following predominant groups: Hindustani (East Indians; 27.4% of the population); Creoles (17.7%); Maroons (descendants of runaway slaves from Africa; 14.7%); Indonesians (principally Javanese; 14.6%); Amerindians (3.7%); Chinese (1.8%); Mixed (12.5%); others (7.6%) *(5)*. The distribution of ethnicities (Figure 3) is critical during analysis in order to recognise and respond to the underlying causes of health determinants.

Figure 3: Ethnicity of population, Suriname, 2004.



Source: General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004; August, 2005.

Dutch is the official language and is most often spoken in 46.6% of households in Suriname but in Marowijne, Brokopondo and Sipaliwini, Maroon languages are most predominant in households. Other than Dutch, languages spoken in Suriname include Sranan Tongo, Sarnami, Javanese, the Maroon languages, and several indigenous languages *(5)*. The linguistic diversity is an important facet in the delivery of health services as well as health promotion and education.

With 90% of the country covered in Amazon rainforest, settlement patterns have split the society into urban, rural coastal and rural interior with disproportionate access to resources for the latter group due to remoteness. The Government has expressed interest in creating strategies aimed at developing the rural coastal and rural interior areas, enhancing the quantity and quality of basic services as well as the creation of employment opportunities.

Economic Context

In 2009, the pillars of the economy were industry, mining and trade, which collectively contributed over 46% of the formal sector Gross Domestic Product (GDP) *(9)*. The annual GDP growth rate over the period 2004 to 2009 averaged approximately 4%, and the lowest growth rate during this period was 3% when comparing 2009 with 2008 *(10)*. Suriname also has a large presence of informal activities that contribute to the economic activity including, but not limited to, notable small-scale gold mining activities in the interior. This informal economy accounts for about 17% of the GDP (basic prices) *(9)*. In 2010, Suriname was given the classification of upper middle-income economy by the World Bank *(11)*, and of medium human development country by the United Nations Development Program (UNDP) *(12)*. The UNDP ranks

Suriname immediately above Bolivia and Paraguay with their Human Development Index, a combined measure of health, education and income.

Official income figures provide evidence of considerable inequalities in income distribution. Based on census data *(13)*, in 1980 the Gini index of income inequality was 0.41 and the Kuznets ratio was 7.6: the richest 20% of the population accumulated 7.6 times more wealth than the 20% poorest. In fact, for every 100 SRD of income generated that year, only 6.2 SRD were distributed to the poorest quintile of the population, whereas 47.3 SRD went to the richest quintile. In 2004, the Gini index increased to 0.55 and the Kuznets ratio to 13.7; the poorest quintile share was 3.9% of total income; the richest quintile share was 53.6%.

From a gender equity perspective, the 2004 census data showed that income distribution was slightly more unequal in men than in women (Gini 0.53 and 0.55, respectively). More recent monthly survey data from salaries in the public sector *(5,1)*, shows, interestingly, that between 2004 and 2009 income inequality in the civil servant workforce has remained significantly lower than the overall trend and it has not worsened (Gini index 0.33 and 0.32, Kuznets ratio 7.3, respectively). Data from the first three quarters of year 2009 shows that civil servants who are women had a median salary 13% higher than civil servants who are men.

In January of 2011, the Suriname Dollar (SRD) was devalued by approximately 20% in an attempt to address the flourishing parallel market. The immediate effects of the weakened currency (SRD) were a sharp increase in the price of fuel and other imported goods and local services.

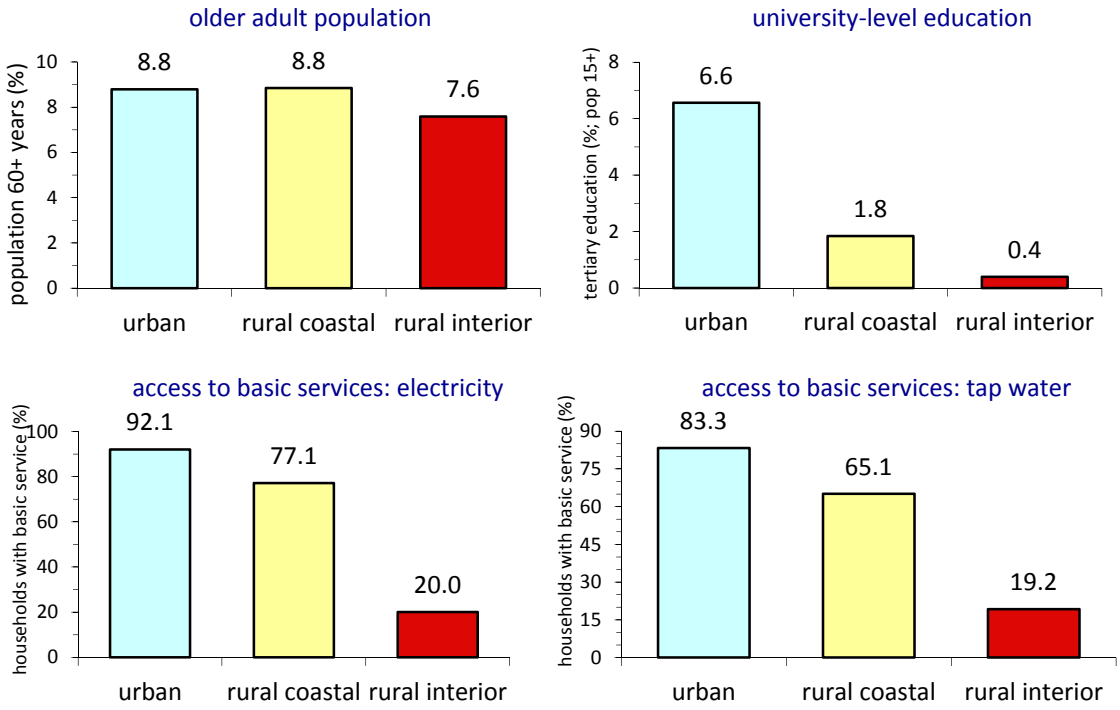
2.2 Other Major Determinants of Health

Determinants of health inequalities remain in the population such as disparities in income, in environmental conditions, among ethnic groups and by geographical location.

Poverty

The UNDP human poverty index (HPI), a multi-dimensional index that measures life expectancy, literacy rates, and decent standard of living, in 2009 had a value of 10.2 for Suriname. This indicated a slight improvement from 2005 with an HPI of 10.9 *(14,15)*. When considering poverty from a human development perspective, longevity, education, and decent standards of living are all relatively impaired and unequally geographically distributed as illustrated in Figure 4.

Figure 4: Poverty from human development perspective, by Region, Suriname, 2004.



***Source*:** General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004; August, 2005.

Poverty levels in Suriname are estimated through income and consumption using a basic food package based on nutrition requirements. A person with insufficient means to provide for their own basic needs, predominantly food, is considered poor. By this definition, poverty in the urban areas of Paramaribo and Wanica, increased from 44.2% of households living below the poverty line in 2000 to 51.3% in 2008, although the average poverty depth decreased from 17.8% to 13.5% in the same period *(8)*. It is worth noting that some populations remain reliant on subsistence farming rather than monetary income to meet their needs.

In 2009, the number of recipients of social benefits, as provided by the Ministry of Social Affairs, increased to the highest levels since 2005, as illustrated in Table 2 *(1)*. The average annual increase in recipients is greater than the 1.3% increase in population stated in the Demographic Profile and Population Characteristics section of the 2009 Statistical Yearbook, which indicates an increase in the percentage of population that qualifies as poor and near poor. This increase in the number of people who need social benefits confirms the increase in poverty reported in the MDG Progress Report 2009.

Table 2: Total number of recipients of social benefits, Suriname, 2005-2009.

	Year					
Total number of recipients	2005	2006	2007	2008	2009	Average annual increase (%)
Financial Support	6,299	6,742	6,669	7,308	7,696	4.5
Old Age Pension	40,473	41,098	41,926	42,818	43,475	1.7
Child Benefit	20, 417	21,415	23,902	24,463	26,141	5.5
Public Health Care Benefits (rightful claimants)	n/a	66,906	69,112	73,369	76,609	4.2
Public Health Care Benefits (rightful claimants and dependents)	n/a	163,780	169,276	173,047	177,833	2.6

***Source*:** Ministry of Social Affairs and Housing, Department of Scientific Research and Planning.

Through the use of the above multi-dimensional indicators (HPI, BFP, etc.), it is evident that the population in the rural interior of Suriname bears a disproportionate burden of poverty compared to its urban and rural coastal counterparts. While no analysis has been made comparing single- or women-headed households living in poverty, it is interesting to note that in the rural interior, 46.2% of households are headed by women while 31.1% and 20.0% or urban and rural coastal households, respectively, are headed by women *(5)*.

Poverty is still a concern within urban areas despite the overall high values of these indicators. Among resorts (neighbourhoods) within Paramaribo and Wanica, access to tap water ranges between 25.2% and 97.7% of households. Among these same resorts, the percentage of the population with a tertiary education ranges from 1.5% to 10.7% *(5)*. Poverty-stricken urban areas have indicators very similar to the rural interior.

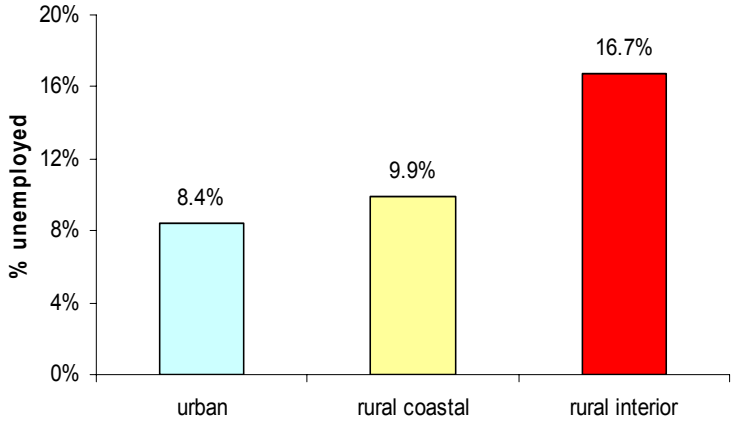
Employment

Of the total labour force[1] in 2009 in the districts Paramaribo and Wanica, the most populated districts of Suriname, 42%, or 138,895 people, made up the economically active population,[2] which has increased annually an average of 1.7% between 2006 and 2009 *(1)*. The number of employed people increased an average of 3.2% annually between 2004 and 2008 but decreased by 0.6% between 2008 and 2009. Unemployment decreased from 12% in 2006 to 9% in 2009. Aside from 2008, the beginning of the global financial crisis, Suriname has experienced a steady increase in employment rates overall. Unemployment data disaggregated by sex among the economically active population aged 15-64 from the 2004 census, shows that women have a disproportionately high unemployment rate of 21.4% compared to the unemployment rate of 10.6% for men *(5)*. When disaggregated by age, the 2004 census data shows that youth between 15 – 24 years make up 28.8% of the economically active population and have an unemployment rate of 21.5% *(5)*, a disproportionate proportion of the unemployed.

Data from the 2004 census also reveal a disproportionate rate of unemployment in the rural interior (Figure 5). Geographic disparities in employment rates could be attributed to the issues of access to opportunity. Aside from resource extraction activities, both formal and informal, the majority of economic sectors are located centrally in the urban or coastal areas.

[1] The total labor force is the total population between the ages of 15 and 65.
[2] The economically active population consists of all people aged 15-65 who are employed or actively seeking employment.

Figure 5: Unemployment rates by Region, Suriname 2004.



***Source*:** General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004. August 2005.

The government employed approximately 40,000 people in 2009 and is the largest employer in the country *(1)*. Approximately 50% of government employees are women. People employed by the government include teachers, police officers, and nurses as well as public officials. More than 25% of government employees are teachers *(5)*.

From a gender perspective, 2004 census data indicates that 45.2% of all women aged 15-64 are economically active and 21.4% of economically active women are unemployed *(5)*. The Gini coefficient indicates that income distribution was slightly more unequal in men (0.53) than in women (0.55).

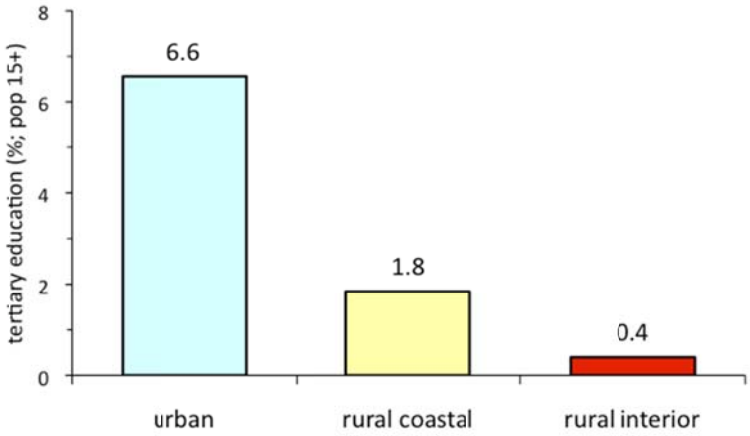
Typical salary levels are low and people frequently supplement their income with second or third jobs often in the informal sector. At present, there is no minimum wage and the formal workweek is 37.5 hours. Many people put in additional hours on second and third jobs in order to sustain themselves and their families. The informal sector, including small-scale gold mining and logging, accounts for approximately 17% of the GDP *(9)*.

Education

In Suriname, education is compulsory for children between 7 and 12 years of age *(16)* however, primary school is intended for children age 6 to 11 years of age. During 2008, 92% of 6-year-olds attended the first grade of primary school *(16)*, which is consistent with 2000 rates. Some studies have shown that school attendance of 6-year-olds in the rural interior may be significantly less. During the 2008-2009 school year, 69,979 pupils were enrolled in 334 primary schools *(16)*. Among 12 to 17 year olds nationally, 61% are attending secondary school, 21% are still attending primary school, while 18% are no longer attending school *(17)*.

However in the rural interior, 44% of children 12 to 17 years of age are no longer attending school *(17)*. The reasons for disparities in educational enrolment at both the primary and secondary level between urban and interior residents can be attributed to barriers in access to educational facilities and a paucity of qualified educational staff *(8)*. There are few secondary schools in the interior, which forces children who wish to continue their education to travel to urban areas. The cost accompanied with boarding secondary school children may be prohibitive to many families in the interior. Further disparities in enrolment by strata are seen at the tertiary level, specifically in university education where barriers to access are heightened by the cost and location of the University in Paramaribo. The percentage of people with university education is significantly higher for residents in the urban areas than in in the rural areas (Figure 6).

Figure 6: University education by Region, Suriname, 2004.



***Source*:** General Bureau for Statistics. Seventh Population and Housing Census in Suriname. Census 2004. August 2005.

Child labour may also present a barrier to education for some children, particularly in the interior. The International Labour office reports that child labour is decreasing in the Caribbean region. In Latin America and the Caribbean, 6.7% of children are engaged in hazardous work *(18)*. Generally, children are often employed in the informal sectors and gold mining, which are prominent in Suriname. A conference in Barbados in 2009 encouraged labour unions to strengthen their opposition to child labour.

Two issues prevalent throughout the educational system are high dropout rates and high rates of students who are not able to advance to the next class. During the 2008-2009 school year, 17% of primary school students were not able to advance. Data disaggregated by district and economic status reveal failure rates up to 36%. Failure rates through primary school are generally lower for girls (14.5%) than boys (19%). Between 2004 and 2009, failure rates have decreased in the districts of Para and Marowijne. The Ministry of Education and Community Development (MINOV), acknowledges that research should reveal what has led to this decrease while rates in other districts have remained fairly static. The rural interior districts of Sipaliwini and Brokopondo had the highest rates of students not advancing to the next level over the 6 levels of primary school from 2007 to 2009 *(16)*.

Data from the Ministry of Education shows a steady increase in the percentage of girls in classes through the tertiary level of education due to higher dropout and failure rates among boys. During the first year of primary school, 46.9% of the students are girls and by the 6th year of primary school, 52.1% of the students are girls *(19)*. In secondary education, during the 2008-2009 school year, data provided by Bureau of Statistics indicates that 60.8% of Secondary General School students and 52.4% of Secondary Vocational School students are girls. In Pre-University and Teacher Training colleges, 62.6% of the students are women. At Anton de Kom University, 64.6% of students are women *(20)*. The high dropout rate among young men is of increasing concern, as it is in other Caribbean countries. The social consequences and long term impact are yet to be fully understood.

The 2008 overall literacy rate of 15-24 year olds is 93%, with little difference between the sexes *(8)*. However, 2006 literacy figures for women disaggregated by urban, rural coastal and rural interior were 96.2%, 94.2% and 45.0% respectively *(17)*. This emphasizes that a disproportionate challenge remains for the attainment of universal education, specifically in the rural interior.

Gender

Health data collection is disaggregated by sex and other relevant variables. The trends in health status show gender differences in health status. For instance, men experience more years of life lost (YLL) due to external accidents while cardiovascular disease is the cause of the most YLL in women. More research regarding the correlation on gender and risk factors is required.

The social determinants of health also show an interesting trend in gender disparities, specifically in education where boys have an increasingly higher drop out or failure rates than girls. The gender disparity grows from primary school through tertiary levels where 64.6% of the students at the university are women. Other social, economic and cultural determinants show disparities that have significant impact on health inequalities such as poverty, housing, small entrepreneurship, political participation and decision-making power. This difference between the sexes effects the inequities in access to and control over resources with regard to employment, future earning potential and potentially influencing health seeking behaviour and health knowledge.

National capacity to produce a solid evidence base (analysis and distribution of the information) still needs strengthening. Policies and programs are not yet systematically screened on a gender equality perspective in their development, implementation, monitoring and evaluation, nor are the existing policies gender responsive and institutionalized. There are some strong NGOs with a focus on gender equality. These are often consulted by the National Gender Bureau (NBG).

The government of Suriname recognizes its international commitment to the pursuit of gender equality, and has ratified and regularly reported on the International Convention to End all Discrimination Against Women (CEDAW). NBG, which has been residing under the Ministry of Home Affairs, has been responsible for gender mainstreaming at the national level and is currently under review and reconstruction. The Integral Gender Action Plan 2006-2010 was the main tool to achieve gender mainstreaming. Gender Focal Points at all 17 ministries are also part of the mechanism of the NBG. These Focal Points have been trained, but the output is still not satisfactory, due to their limited mandate and the weak positioning of gender issues within the ministries. A recently conducted situation analysis on gender equality, gender relations and the position of women in Suriname is in its final draft and should be a valuable reference document for gender mainstreaming in health in particular, and in national development issues in general. The government's Multi-Annual Development Plan 2006-2011 contains a separate chapter on gender.[3]

Nutrition, Food Safety and Food Security

The rich cultural heritage in Suriname extends into the food culture and is apparent in the wide variety and blending of available foods. This mix of cultures leads to difficulty in determining what the typical Surinamese consumes and the nutritional value consumed. Research is necessary to determine what the typical nutritional intake is and where deficiencies are in the Surinamese diet. Currently, a food consumption survey proposal is being finalized and will be presented to donor organizations and relevant government sectors to explore funding opportunities. The proposal includes a household and school based component to determine the food intake, micro nutrient status, weight, height, and haemoglobin of children (< 6 years), adolescents (12- <17 years) and women aged 20-59 years. Dietary guidelines will be developed based on the results of the food consumption survey *(21)*.

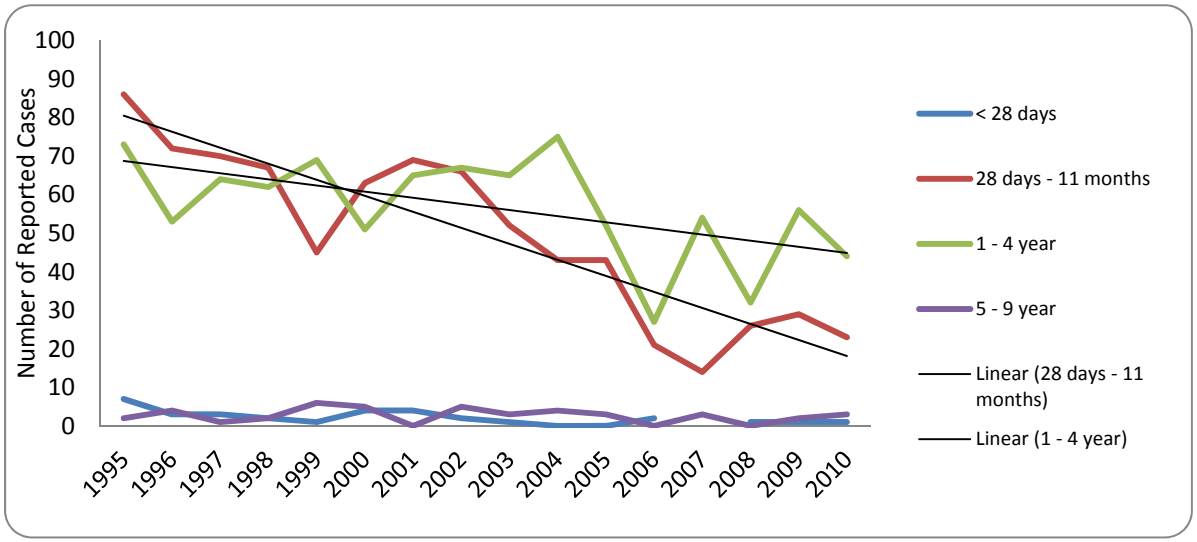
While there is limited data on the nutrition and health status of the Surinamese population, MICS 2006 data for children under age five indicate 9.9% are moderately underweight, 0.8% are severely underweight, 7.7% are moderately stunted and 4.9% are moderately wasted. The interior had a higher percentage of severely stunted children (2.8%) compared to nationwide (1.4%) *(17)*.

Data on malnutrition and hospitalizations for children aged <28 days to 10 years from 1987-1995, showed increasing numbers of cases, peaking in 1994 and 1995 (185 and 183 cases). From 1995–2010 a downward trend (Figure 7) has been noted in the number of cases, in all age groups but markedly in

3 At the time of developing this document, the Development Plan 2012 – 2016 was not available.

children aged 28 days – 11 months and 1 – 4 years. Overall, admission of children under five has decreased in the last 15 years *(22)*.

Figure 7: Hospitalization due to malnutrition in children aged <10 years, Suriname, 1995-2010.



***Source*:** Epidemiology department, Bureau of Public Health.

MICS 2006 data on overweight show that girls under five are slightly more frequently overweight (3.3%) than boys (2.4%). The highest percentages are presented by children in the districts of Nickerie, Coronie and Saramacca (5.1%), followed by those in Wanica and Para (4.0%). Children whose mothers have tertiary education (7.5%) or belong to the richest wealth index quintiles (4.8%) also show a high percentage of overweight *(17)*. The 2009 Global School-Based Student Health Survey (GSHS) among children aged 13-15 years shows that approximately 7.5% are underweight and 26% are either overweight or obese *(23)*. This indicates a double burden of malnutrition and obesity in children in Suriname.

Some standards and guidelines have been developed to address nutrition issues. WHO Child Growth Standards are incorporated in a new child health record (including growth, development skills, nutrition counselling) that was piloted in select clinics offering care for under 5 year olds. The new health record was accepted enthusiastically by these clinics during the pilot study. The results of the study indicate that more intensive training is needed for clinic staff. Not all clinics appear to be equipped or have sufficient capacity for care for under 5 year olds. For implementation in all clinics offering care for under 5 year olds, support on a policy level is needed *(24)*.

A baseline assessment of the food that is available in 70 primary schools has been conducted in 2009. High percentages of schools sell high-fat foods and sugary drinks. Mainly fried foods are available for snacks. Only one school sold milk products *(25)*.

A manual to improve the food availability at schools (kindergarten and primary schools) has been developed and piloted in 2 schools. The pilot indicates that the nutrition value of food and drinks offered at schools needs to be improved. Steps to realize further implementation include training of school staff, setup of a support mechanism for schools, project activities aimed at promoting awareness among staff and schools and information campaigns to prepare healthy foods and snacks. Additional recommendations include providing measures to make healthy food affordable at schools and meeting conditions for selling safe food *(26)*. For people with diabetes, hypertension and obesity a Surinamese nutrition guideline has been developed *(27)*. In addition, the National AIDS Program has drafted nutrition guidelines for people living with HIV/AIDS.

In 2010, along with establishing the Caribbean Agricultural Health and Food Safety Agency (CAHFSA) in Suriname, a multipurpose, integrated laboratory capable of testing agricultural and other food products was set up. The upgrading of the analytical capabilities in food control will ensure the quality control of exported products. Control of exported products is driven by the demands of the export community but there is little control on domestic products. Proper structuring and functioning of the national Codex Alimentarius Committee and its work groups will advance national food regulations and standards *(28)*. The Bureau of Public Health and the Ministry of Agriculture, Animal Husbandry and Fisheries train food handlers to regularly inspect food establishments and build capacity in the safe use of pesticides.

The country is prone to flooding, particularly in the coast and some parts of the interior, which can affect food security due to loss of crops and inaccessibility. In 2007, a food security assessment was executed. Vulnerable groups were identified in the urban, rural coastal and rural interior areas. Key factors influencing food security were low education level within vulnerable groups, a decrease in risk management capacities, frequent flooding of farmland and limited financial capital. Addressing the needs of vulnerable groups is essential to prevent further deterioration of the food security situation *(29)*.

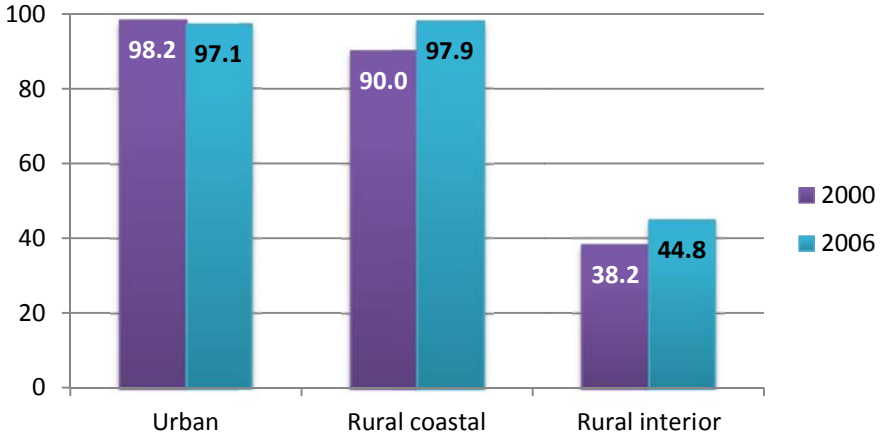
Due to the devaluation of the local currency by 20% in January 2011, an increase in general price level was recorded at 13.7%. Food prices, both local and imported, have increased approximately 17%. This, as well as the impact of the global food crisis, affects households and causes greater vulnerability to food and nutritional insecurity *(30)*. Increasing national prices for fuel, essential for productive activities, also threaten food security for those in the interior and the urban poor, with potential major health impacts.

Environmental Health

Water

Overall, 93% of the population in Suriname has access to improved drinking water sources – 97.1% in urban areas, 81% in rural areas (31). An improved drinking water source is defined based on the types of technology and levels of service that increase the likelihood of access to safe drinking water (32). As Figure 8 illustrates, rural coastal access is at 97.9% while coverage is only 44.8% in the rural interior (17). Despite enjoying a high level of access to improved water sources, the urban areas experienced a decline in access between 2000-2006 because the urban population grew at a faster rate than Suriname Water Supply Company (SWM) and the government were able to provide improved drinking water services to new settlements.

Figure 8: Population (%) using an improved water source, by Region, Suriname, 2006. [4]



***Source*:** Government of Suriname, United Nations Children's Fund. Multiple Indicator Cluster Survey 2006; May 2009; Government of Suriname, United Nations Children's Fund. Multiple Indicator Cluster Survey 2000.

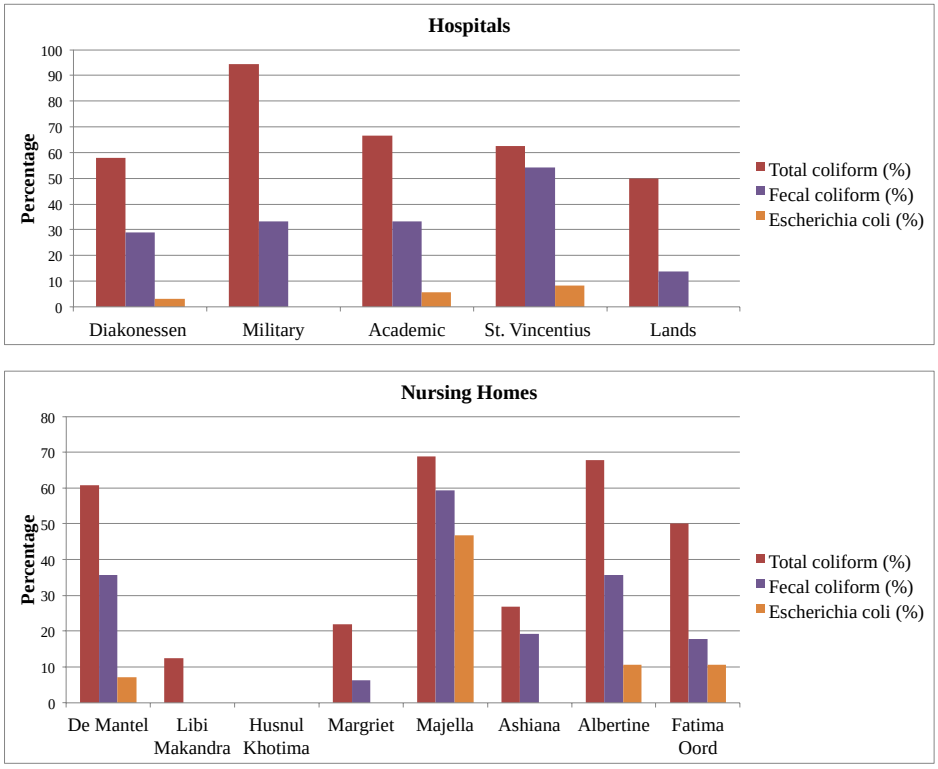
For households experiencing barriers in access, the differences, by region, in relying on various unimproved water sources bring with them different health risks. Of the households using unimproved drinking water sources, urban areas have a higher proportion of water drawn from cut pipes than other regions (39.1%). The use of cut pipes in urban areas creates a risk of contamination through contact with human or animal waste. Rural coastal households without access to improved sources are reported as relying on unprotected wells, unprotected springs, tanker trucks and surface water at similar proportions (4% each). However, it is important to note that in Suriname, the tanker trucks are filled with tap or bottled water from Paramaribo and are widely considered to be improved sources. In the rural interior districts of Brokopondo and Sipaliwini, the main drinking water source for 54.2% of households is untreated surface water (creeks, rivers and ponds) *(17)*.

The Government of Suriname has designated responsibilities for water supply to two entities. Suriname Water Company (SWM) is a government-owned utility that supplies potable water to the majority of the population in the urban areas and the coastal zone. The Department for Water Supply (DWV) under the Ministry of Natural Resources (NH) is responsible for water supply in rural areas but NGOs such as the Foundation for the Development of the Interior (FOB) and a diverse range of private operators play a significant role. NH/DWV is also responsible for the policy direction of SWM. Most of the knowledge in the water sector resides with SWM, which has started taking over the NH/DWV facilities in the coastal zone.

SWM and the BOG/MOH are responsible for water quality control, testing and data management but very little water quality control activities take place due to lack of resources. Improved urban water quality surveillance and rural water treatment and monitoring are needed in Suriname but require financial support, an increase in training and trained staff within the BOG and the creation of a comprehensive water quality monitoring program. Currently, water quality is monitored by BOG at hospitals and homes for the elderly. Incidence of coliform bacteria found in water samples is shown inFigure 9. A Water Master Plan that will significantly increase potable water coverage across the country has recently being developed and is now being considered within the government.

[4] The MICS 2000 report did not include rainwater collection as an improved drinking water source but the 2006 report did. The 2000 data shown in this graph includes rainwater collection as an improved drinking water source. The geographic definitions of urban, rural coastal and rural interior also changed between the two reports. No explanation was given as to why this change was made.

Figure 9: Levels (%) of coliforms in water in hospitals and nursing homes, Suriname, 2010.



***Source*:** Stuart, P. Drinking Water Monitoring Program. Drinking Water and Cholera Workshop. MOH/BOG, 26 May 2011.

Other agencies with responsibilities in the water sector include the Ministry of Health in charge of monitoring environmental health, the Ministry of Agriculture in charge of irrigation, the Ministry of Public Works in charge of drainage and wastewater and the Ministry of the Regional Development in charge for drainage in secondary and tertiary systems.

Sanitation

Overall 84% of the population of Suriname is living in households with access to improved sanitation facilities, 90% in urban and rural coastal areas and only 33% in the rural interior *(31)*. Increased infrastructure coverage and complementary hygiene promotion are still needed in the interior to improve basic hygiene. Under the leadership of the Ministry of Public Works and the Department for Civil Technical Services, implementation of sustainable solutions in sanitation has historically been challenging. Presently the Sanitation Sector Strategic Plan for Suriname, financed by the IDB, is in draft form *(33)*.

In Paramaribo, private vacuum trucks empty septic tanks and oil and grease pits. The raw discharge facility for these trucks was built along and empties into the Suriname River. This site is upstream of a recreational facility and a Hindu pilgrimage site. When the access road to the dumpsite is not accessible, the tanks discharge into the ditch along the road to Domburg *(33)*.

Rapid improvements to the physical infrastructure of the drainage system in the urban areas have been underway for the last 5 years. However, challenges remain during rainy seasons when the risk of flooding increases and slow or blocked drainage of rainwater leads to dispersion of effluent (mainly fecal waste from septic tanks) through floodwater into the wider environment. Existing drainage systems are clogged with silt and trash, particularly plastic bottles. Building on the advancements in infrastructure of the past 5 years would likely help alleviate flooding problems.

Waste Management

Inappropriate waste management creates significant environmental health challenges in Suriname. Inadequate waste management strategies with fragmented responsibilities and inefficient technical facilities in peri-urban and rural areas result in low coverage of waste collection services, insufficient financing and environmental pollution. For medical and other biohazard waste, the regulation and processes of collection, management, and treatment/disposal are weak and require strengthening in order to meet the nation-wide demand. As a way forward, in February 2011, the MOH signed an agreement with a local firm[5] for the proper safe disposal of medical waste on a nation-wide scale *(34)*.

Waste products are not separated leading to disposal of different kinds of household and industrial chemical waste in the designated public landfills. A national policy for the environmentally sound management of persistent hazardous substances and waste is lacking and insufficient awareness exists in the different sectors of society on the dangers posed by the unsafe use and disposal of chemicals.

A government owned public landfill with uncontrolled disposal located in the Wanica district serves the city of Paramaribo and Wanica district area, and transformation to a controlled landfill has been considered since 2002. In the other districts the district commissioner assigns public landfills. Due to the limited capacities of current waste management services in Paramaribo and Wanica, only 70% of the estimated 70,000 tons of waste generated annually is collected and in the other districts an estimated 0 to 30% of the waste is collected and disposed of in open dumpsites *(35)*. The illegal dumping or open burning of household waste, although in small amounts, remains a recurrent phenomenon in residential and rural areas. Waste has been used as fill in preparation of construction on private property inland or near the Suriname River. Recent studies have shown no increase in per capita waste generation. Household waste makes up an estimated 67% of total waste produced *(35)*.

Environmental Contamination

Ongoing informal and small-scale mining causes mercury to be released into the environment. Although many individual studies have been carried out and the dangers of mercury are well documented internationally, there is insufficient information for Suriname. Concern is increasing around the health impacts of exposure to mercury both through working in the mining industry and exposure to an environment contaminated by mercury released during mining activities. The interior population that relies on rivers and streams as a source of water and food may be particularly vulnerable to mercury contamination.

The large-scale mining companies use cyanide in their processes. Risks in the transport, usage and storage after usage must be monitored to ensure continued safety of the mineworkers and the environment. Arsenic, which often occurs naturally in association with mineral deposits, can be released into the environment during mining activities. Care must be taken to ensure that the movement of arsenic-rich materials causes no adverse environmental effects.

The import of pesticides per capita in Suriname remains higher than in similar countries *(28)*, with very weak control on use despite regulated import. An assessment of the inherent risk caused by exposure is necessary since no data is available on the health impact of the extensive and unsafe use of pesticides in the country. Suriname has a Pesticides Ordinance that was enacted in 1972. While registration, advertisement and storage of pesticides is covered in the Ordinance, no guidelines have been published and made available and coverage of transportation and disposal of pesticides is weak.

[5] It is projected that the local firm Recomsur, Recycling Company Suriname, will invest US$ 200,000 in a professional waste treatment plant including an incineration oven.

Climate change

Concerns about the impact of climate change on the country rest primarily with the vulnerability of the low-lying coastal region and changing rainfall patterns, both of which stand to affect the environment and the health of the population. Due to the low and flat topography of the coastal region, any rise in sea level would have major effects on the environment, human health and, because of the dense population in the coastal region, the socio-economic makeup of Suriname *(36)*. While few studies have been done on the high vulnerability of the coastal area, a rise in sea level would affect land used mainly for agriculture purposes of rice and vegetable cultivation as well as wetland areas. Large sections of economic activity through the agricultural land use and industrial structures located mainly in the coastal area will be affected, causing a projected negative effect on the GDP *(36)*. Due to the dense population of the coastal area, approximately 80% of the population would be impacted. Similarly, the interior remains vulnerable to flooding along rivers where the interior populations are concentrated.

Additionally, the changing patterns in rainfall are expected to present unique challenges to the environment as well as bearing direct and indirect effects on the health of the population. For instance, changing rainfall patterns will affect fresh water resources, agricultural water resources, hydroelectric power and navigation as well as transportation to certain parts of the interior of the country accessible mainly by boat *(36)*. Moreover, as climate conditions change, direct and indirect health impacts will occur. Direct human health implications include increased cataract, skin cancer, and other diseases linked to the immune system of humans due to the depleting ozone layer and erosion. Patterns in vector-borne diseases including malaria, dengue, bilharzia, lymphatic filariasis will also be affected through changes in distribution and seasonal transmission.

Presently, Suriname is an active participant in international climate change initiatives and in 1997, ratified the Vienna Convention, the Montreal Protocol, the United Nations Convention on Climate Change, the Kyoto Protocol, and the UN convention to Combat Desertification.

Occupational Health and Safety

The main economic sectors in Suriname are mining, oil exploitation, wood, agriculture, fishery and animal husbandry and construction.

Suriname has not ratified any of the ILO occupational safety and health conventions (Convention 155 on Occupational Safety and Health, Convention 161 on Occupational health services and the recent Convention 187, the Promotional Framework for Occupational Safety and Health Convention). In 2006, the country did ratify the Worst Forms of Child Labour Convention (Convention 182). In cooperation with the ILO, unions conduct campaigns to eliminate the worst forms of child labour.

Occupational risk factors present in the different occupational sectors in Suriname include safety hazards (falls, unsafe machinery related issues, road traffic injuries, etc.), physical hazards (exposure to noise, etc.), biological factors (exposure to HIV and Hepatitis B in the health care sector), chemical hazards in agriculture, mining and industry, exposure to dust in the wood sector, ergonomic hazards and stress. The surveillance of the occupational risk factors is extremely weak.

During 2009 1,427 occupational accidents were reported *(1)*. Table 3 lists the types and number of reported occupational accidents in 2008 and 2009.

Table 3: Occupational Accidents, Suriname, 2008-2009.

Type of Accident	2008	%	2009	%
Stepping on objects; Being struck by striking objects	459	30.2	466	32.7
Falls	394	25.9	349	24.5
Falling Objects	203	13.3	198	13.9
Caught in or between objects	68	4.5	67	4.7
Overexertion or wrong movements	21	1.4	26	1.8
Exposure to or contact with extreme temperature	8	0.5	13	0.9
Exposure to or contact with electricity	4	0.3	6	0.4
Harmful substances of radiations	3	0.2	4	0.3
Other accidents not classified elsewhere	361	23.7	298	20.9
Total	**1,521**	**100**	**1,427**	**100**

***Source*:** General Bureau for Statistics. Statistical Yearbook 2009. Paramaribo; November 2010.

In 2009, 18 deaths were attributed to occupational accidents, a fatality rate of 1% of reported injuries *(1)*. Very few occupational or work related diseases are diagnosed or reported, thus obscuring the true nature and magnitude of the problem. Leishmaniasis may be an occupational concern as 89% of cases occur in men, which may indicate a connection to the work environment.

The Ministry of Labour has an occupational safety and health program. The ministry mainly focused on large and medium-sized enterprises with less attention to the issues in small enterprises and the informal economy. Hepatitis B vaccination is provided to all health workers. Some hospitals also participate in a hospital-acquired infection control program and some hospitals keep a reporting system of sharps/needle accidents. A step-wise approach including proper hand washing practices, injection safety and infection control is being prepared as part of a patient safety program.

The coordination mechanism that was set up several years ago to address workers' health is presently not operational. There are very few experts on occupational safety and health in Suriname with the majority of them employed by large companies.

Disaster Preparedness and Response

In May of 2006 and April of 2007 Suriname was confronted with severe flooding in the interior. This was the first time that the government of Suriname was faced with issues surrounding environmental disaster preparedness and disaster response. The national response to these floods emphasized the need for a national disaster plan. Presently, the Nationaal Coordinatie Centrum voor Rampenbeheersing (NCCR) is responsible for overall disaster coordination in Suriname with health as one of the contributing pillars of the overall disaster model.

Unlike other Caribbean countries, direct adverse health effects due to hurricanes are currently less important for Suriname, since the country is not located in the hurricane zone but this could change as an effect of climate change. As extreme weather conditions are expected to become more common, models needs to be developed to predict these weather patterns so precautionary measures can be taken to protect the population.

The Ministry of Health has installed a Health Disaster Commission, which is charged with preparing the ministry for potential health disasters and is chaired by a National Health Disaster Coordinator. While preparedness is essential, mitigation of the risks is necessary to reduce potential casualties and

damages. Limited knowledgeable and well-trained human resources, scarce disaster equipment and supplies and limited support from top management of the health institutes are some problems currently identified. A work plan has been developed by the commission to reduce the gap of the identified problems and needs. The National Health Disaster Coordinator and NCCR are looking into standardizing the training of the disaster responders, especially in mass casualty management, as different consultants have introduced several different systems in the past. The work plan of the Health Disaster Commission is also calling for a risk assessment for the use of industrial chemicals and plans in case of disasters.

The Hospital Safety Index survey has been carried out for all 5 hospitals in Suriname. The results of the survey will be used by the hospitals in their planning process with the objective to keep the hospitals operating under all circumstances.

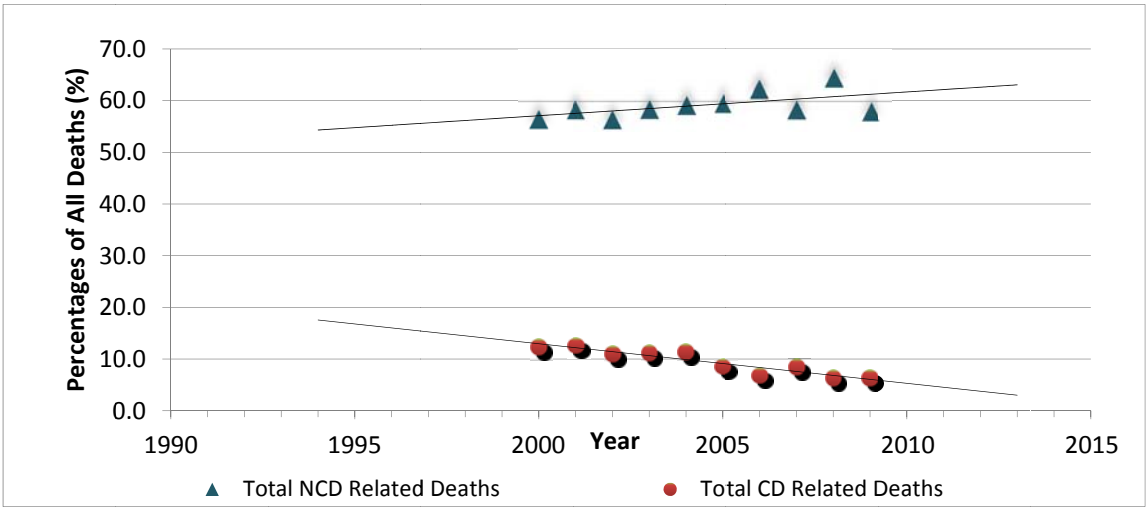
Man-made disasters are a concern in Suriname. The Nickerie and Wageningen areas suffered from a rotavirus outbreak in 2011 due to high water levels in the rivers. This outbreak could be classified as a man-made disaster as the water in this particular area could not drain because of man-made dikes.

2.3 Health Status of the Population

The Burden of Chronic and Non-Communicable Diseases

Similar to global trends, Suriname is currently experiencing a shift from communicable diseases (CDs) towards an increasing burden of non-communicable diseases (NCDs). This trend is related to the determinants of health, as described in the previous section, as well as the changing demographic profile of Suriname. Figure 10 illustrates this trend: mortality attributed to NCDs continues to increase, while deaths attributed to CDs are decreasing.

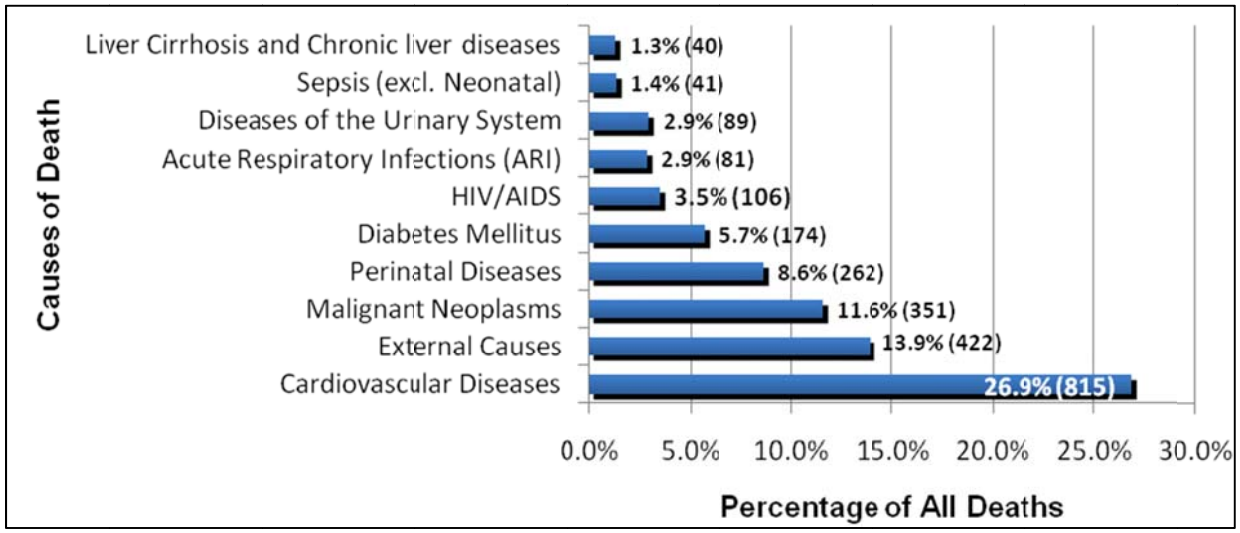
Figure 10: Deaths Attributed to Non-Communicable Disease and Communicable Disease, Suriname 2000-2009.



***Source*:** PAHO/WHO calculations based on Data from Bureau of Public Health, Ministry of Health, 2000-2009.

In 2009, 60.5% of all deaths classified within the 10 leading mortality causes were attributed to NCDs *(37)*. Cardiovascular diseases, malignancies and diabetes are among the ten leading causes of mortality, as shown in Figure 11. In addition, external causes (accidents and violence) and mental disorders are significant health problems.

Figure 11: The Top 10 Causes of Death (%), Suriname, 2009.



***Source*:** Bureau of Public Health. Mortality in Suriname 2008-2009. Ministry of Health. Paramaribo; February 2011.

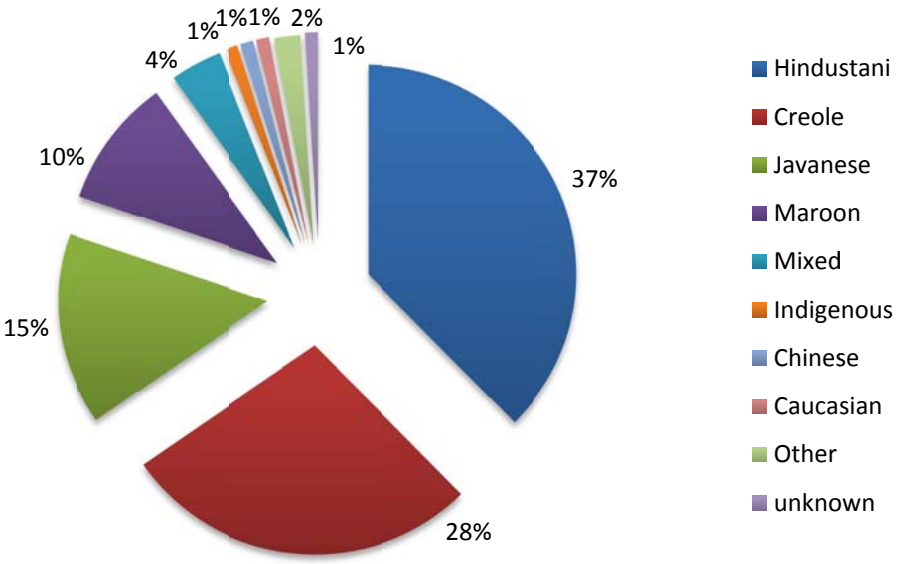
In 2005, a burden of disease study based on available mortality data provided more insight in the different mortality causes related to NCDs between men and women *(38)*. For men, external causes clearly contribute the most to the number years of life lost (YLL), followed by cardiovascular diseases, malignancies and diabetes, while for women, cardiovascular diseases contribute the most, followed by external causes, malignancies and diabetes. Considering the causes of death ranked by the YLL, NCDs account for a higher share, compared to communicable diseases and perinatal conditions *(38)*.

Cardiovascular Disease, Hypertension and Diabetes

Cardiovascular diseases have been the leading cause of death for many years. Among them, the most prevalent are cerebrovascular diseases followed by ischemic heart diseases *(38)*. Mortality from cardiovascular diseases shows a downward trend, from 29.4% in 2005 to 26.4% in 2009 due to medical advances regarding cardiovascular surgeries in Suriname in the past five years. Mortality rates due to cardiovascular diseases are higher for men than for women *(38, 39)*. Morbidity data on myocardial infarction from the Academic Hospital for 2007- 2010 indicate that men are more affected than women (76% vs. 24%) *(40)*.

Disaggregating the cardiovascular mortality data by ethnicity shows an overrepresentation of Hindustanis who represent 27.4% of the total population and Creoles who represent 17.7% of the population *(5)*. In 2009, Hindustanis accounted for 33.7% of cardiovascular deaths, 48.3% of diabetes deaths and 44.8% of myocardial infarction deaths *(37)*. A study on 637 diabetes patients in 12 primary care centres (PHC) reported an earlier onset of diabetes for Hindustanis (44 years) when compared to Creoles (53 years) *(41)*. Figure 12 illustrates data from 2002-2007 of all mortality due to cardiovascular diseases, showing 37% in Hindustanis, followed by 28% in Creoles, 10% in Maroons, 15% in Javanese and 4% in the mixed ethnic group *(42).* Figure 3 shows the ethnic distribution of Suriname to compare with the ethnic distribution of mortality.

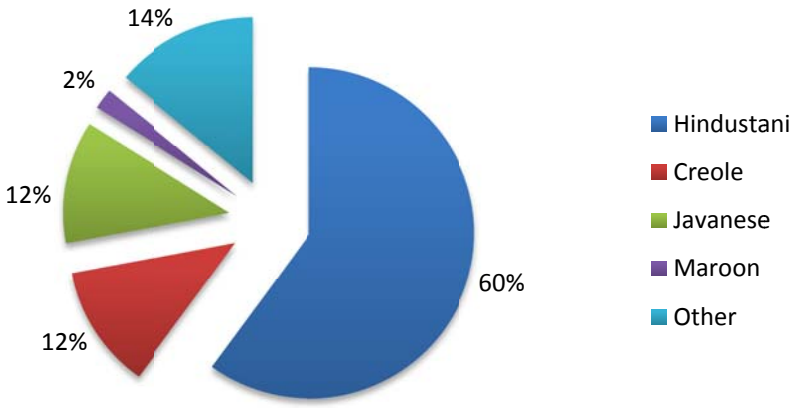
Figure 12: Mortality (%) due to cardiovascular diseases by ethnicity, Suriname, 2002-2007.



***Source*:** Bureau of Public Health. Mortality in Suriname. Ministry of Health. Paramaribo; 2002-2007.

Morbidity data on myocardial infarction and ethnicity from the Academic Hospital for 2007- 2010 indicate 60% of patient admissions are Hindustani followed by the Creoles (12%) and the Javanese (12%)). Figure 3 shows the ethnic distribution of Suriname to compare with the ethnic distribution of myocardial infarction.

Figure 13: Myocardial infarction hospital admissions, by ethnicity, Suriname, 2007 – 2010.



***Source*:** Academic Hospital, 2007-2010.

In addition, morbidity data on diabetes from the same hospital, show Hindustanis as the largest group hospitalized followed by Creoles, Javanese and Maroons. Hindustanis aged 41-60 years and over 60 years were the largest group being hospitalized *(43)*. The unfavourable cardiovascular risk profile of Hindustanis has its implications for prevention in primary care, emphasizing the need for early detection and treatment of diabetes and hypertension.

Diabetes ranks fifth among the ten leading causes of death (2005-2009) and is among the chronic illnesses the most prevalent disease, according to a 2001 study *(44)*. A study reporting the main reasons for visits to a PHC clinic among persons aged 60 years or older showed that diabetes accounted for

13.2% of visits, while hypertension accounted for 26.4% of visits. When observing visits due to co-morbidity, diabetes and hypertension accounted for 12.5% and a combination of diabetes, hypertension and cardiovascular diseases accounted for 11% *(45)*.

In addition, causes for registered visits to primary care clinics indicate diabetes and hypertension are the most common reasons and a steady increase in the percentage of patients with diabetes, hypertension or a combination of both. Women are twice more likely than men to visit the clinics for diabetes and three times as likely for hypertension or a combination of diabetes and hypertension. Because men are less likely to request care for these conditions, they suffer from more complications due to chronic diseases than women *(46)*.

Between 2005 and 2008, 15 amputations were performed annually at the Academic Hospital (AZP) in patients with diabetes, with more men (60%) affected than women (40%). Of the amputation patients, 35% were in the age group 60 – 70 years followed by 30% in the age group 50 – 60 years and 15% in the age group 40 – 50 years. 50% of the amputation patients are Hindustani followed by Creole (30%) and Javanese (9%). 40% of the patients are from Paramaribo, 30% from district Wanica, 10% from district Saramacca and 6% from Commewijne *(39)*. According to the 2004 Census, the population distribution by district is 49% in Paramaribo, 17% in Wanica, 3% in Saramacca and 5% in Commewijne *(5)*.

Between 1997 and 2007, the number of dialysis patients and the number of dialyses has increased, with a steady trend of approximately 1.4% annually. Of patients undergoing dialysis, 60% are men and 40% are women *(28)*. The majority of dialyzed patients are in the age group 50-60 years, followed by 21 % in the age group 40 - 50 years and 17% in the age group 30 - 40 years. The lowest percentage (11%) was in the age group 60 -70 years. Of dialysis patients, 32% were Hindustani, followed by Javanese (24%), Creoles (20%) and Maroons and Mixed ethnic group (8%). Almost 60% of the patients are living in Paramaribo and only 14% in district Wanica *(39)*.

Cancer

Malignant neoplasms are the third leading cause of death. Percentages of cancer-related mortality, among the ten leading causes of death, show an increase from 6.4% in 1996 to 11.6 % in 2009. In 2009, most cancer deaths were resulting from cancers of the rectum (13.6%), followed by lung cancer (12.5%). However, female sex-specific cancers (breast, vulva, vagina, cervix, corpus uteri, uterus, ovaries) accounted for 20.3% of all cancer deaths. Male sex-specific cancers (prostate and penis cancers) accounted for 9.4% of all cancer deaths *(42)*.

The burden of disease study indicates more women die of breast and cervix cancer than from maternal conditions and women die much younger than men due to sex-specific neoplasms *(38)*. For women the average age at death due to breast and cervical cancer was approximately 56, while the average age at death for men due to prostate cancer is approximately 77, meaning that women lose more years of life to these cancers than men *(38)*.

When considering ethnicity, Creole and Javanese show high mortality rates for neoplasms *(37, 38)*. Data from the National Pap Smear Project (1998-2000) revealed that the highest prevalence rates of pre-malignant cells are among women between the ages of 30-40 years; specifically among the Maroons and Creole/mixed women *(44)*. Sexual practices including a low prevalence rate of contraceptives and cultural and traditional beliefs and practices among the Maroon population might increase the vulnerability for STDs and partially explain the high prevalence of pre-malignant cells.

Lifestyle and behavioural risk factors

Lifestyle and behavioural risk factors are major contributors to the NCD epidemic, specifically, unhealthy diets, physical inactivity, and tobacco and alcohol use. Risk factors are also linked to the environments people live and work in as characterized by social determinants including poverty, gender, housing and education. Data from 2001 provided insight regarding lifestyle and behavioural factors around NCDs: 70%

were physically inactive, 30% smoked, 20% were obese (BMI>30) and 15% had high total cholesterol (>6mmol/l) *(47)*. In addition, the Global School-Based Student Health Survey 2009 among children aged 13-15 years showed that the majority (73%) of children have physical activity of less than one hour per day *(23)*.

Food supply data indicate increased energy availability per capita over the past four decades (from 2000 kcal in 1961-1963 to ~2700 kcal in 2003-2005) *(48)*. The increased energy availability appears to be related to increases in fat and sugar availability and possibly reflects changing food consumption patterns. The Global School-Based Student Health Survey 2009 indicated a continuous high caloric contribution of sugar, with 81% of children having consumed carbonated soft drinks one or more times per day.

Data from the 2009 Global Youth Tobacco Survey (GYTS) reported that among students aged 13-15 years, 19.2% of students were current users of tobacco products. Additionally, the survey indicates that students are exposed to second hand smoke: 46.6% lived in homes where others smoked, 53.3% were exposed to smoke around others outside of the home and 49% had at least one parent who smoked *(49)*. The National Drug Prevalence Survey indicated a higher proportion of cigarette use in the age group over 35 years of age *(50)*. Smoking prevention in youth, smoking cessation in adults and reduction of exposure to second hand smoke are key issues in tobacco control and should be adequately addressed. These issues are incorporated in the Framework Convention on Tobacco Control (FCTC), which Suriname ratified in 2008. Compliance with the FCTC proceeds in stages. The first stage requires Suriname to ratify tobacco control legislation by the end of 2011. All requirements must be met within 5 years of ratification. Currently, a tobacco control board exists in Suriname, and the tobacco legislation to address smoke-free environments, advertising bans, and health warnings is underway.

Harmful use of alcohol is another risk factor of concern. Results from the 2009 Global School-Based Student Health Survey indicated that among the students aged 13-15 years 73.8% had their first drink before the age of 14 and 32.6% consumed alcohol at least on one or more occasions in the past month. Among adults, a higher proportion of alcohol use was observed in the age group 26-34 (36.8%), followed by the group 35-64 (33.9%) *(23)*. At present, Suriname has a drug master plan to decrease tobacco and alcohol consumption, among other substances; however, financial and human resources are required to support further implementation.

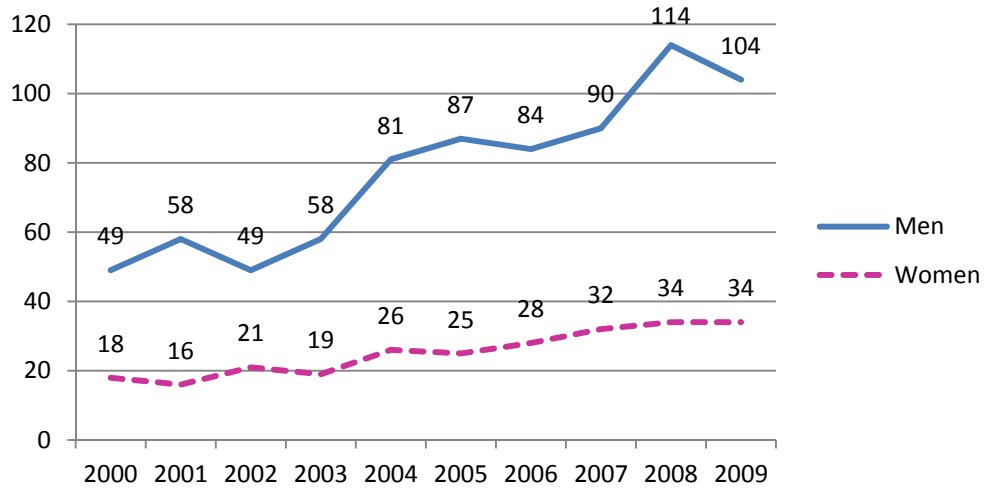
Mental Health

The mental health services currently available, primarily by psychiatrics at the Suriname Psychiatric Center (PCS), are highly centralized and not widely accessible to the entire population. Neither community residential facilities, nor community-based inpatient units are available in the country for persons with mental health problems.

Mental health issues represent a significant public health challenge for the country as the need for mental health services increases related to interconnected risks, stress and anxiety. An indication of the severity of this problem is the increase in the number of suicides since 2000 (67), which more than doubled by 2009 (138). By ethnic group, Hindustanis have the highest numbers of suicide at 66.2%, followed by Creoles at 11.5% in 2008 and 72% and 10% in 2009, respectively *(37)*. Many suicides were self-poisonings with pesticides *(37)*.

The most frequent diagnoses of admission to PCS are substance abuse (50%), mood disorders (20%), schizophrenia (12%) and personality disorders (11%) *(51)*. Incidents of suicide disaggregated by sex are shown in Figure 14.

Figure 14: Suicides by sex, Suriname, 2000-2009.



***Source*:** Bureau of Public Health. Mortality in Suriname 2000-2009. Ministry of Health. Paramaribo; 2000-February 2011.

The country's capacity to effectively address these problems and to ensure preventive action requires renewed efforts to tackle the burden and the determinants of mental disorders. For this reason, consultations with stakeholders took place in 2010, resulting in three main priorities for Mental Health Care: integration of mental health into Primary Health Care, decentralization of mental health services and an improved mental health information system.

External Causes

External causes are the 2nd commonest cause of death. Registered visits at the emergency unit indicate that external causes of morbidity and mortality, specifically transport related injuries have increased since 2002. In 2009, the crude mortality rate for traffic deaths was 22 deaths per 100,000 inhabitants, which is almost double the 12 traffic deaths per 100,000 reported in 2004. The 2009 rate is above the average for developing countries (18: 100,000) *(52)*. The highest rate of road traffic fatalities was among riders of motorized two or three-wheeled vehicles, followed by motorized four-wheeled vehicles. The highest occurrence of traffic accidents occurred in the age group 20-24, followed by 15-19 and 25-29 *(53)*. In 2008, a National Road Safety Committee was established and a national directional framework on road safety was developed and approved in 2010. This plan calls for a public health and multisectoral approach. Of the other registered injuries caused by external causes, the most common were unintentional falls, struck by/against objects (unintentional), and injuries related to being hit/struck/bitten by person or animal.

No formal national registration system exists for domestic violence in Suriname. A survey on the attitudes of women 15 to 49 on Gender Based Violence (GBV) in a domestic setting was completed in 2005. 13.2% of the women surveyed believe that a husband or partner is justified in beating his wife or partner for any reason *(17)*. The most prominent proportion of women with this belief was from the rural interior (34.9%). Similarly women with no or only primary education (32.7% and 20.4% respectively) and those that comprised the poorest quintile of the population (26.7%) believed that men were justified in beating their wives or partners if she went out without telling him, neglected the children, argued with him, refused sex with him, or if the food is burnt *(17).* These attitudes may in part be due to the relative neglect of violence and injury prevention in the country to date *(17)*.

The Burden of Communicable Diseases

In spite of the ongoing epidemiological shift towards NCDs, some communicable diseases such as HIV/AIDS, TB and dengue are still a concern. Meanwhile, other still-present Neglected Tropical Diseases

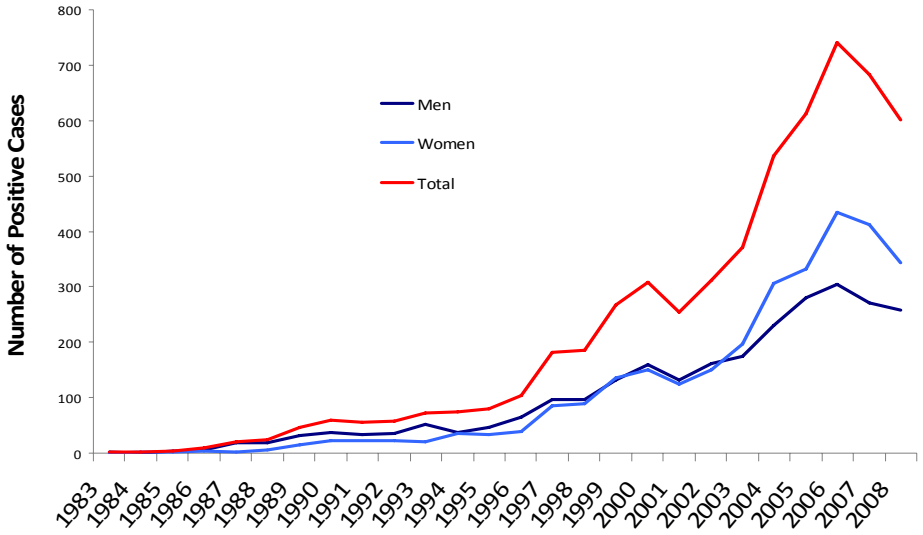
(NTDs) and malaria are targeted for elimination *(54)*. Specifically, the country has had marked successes in the control of malaria, receiving in 2010, the honour of PAHO's 'Malaria Champion of the Americas'.

Suriname has seen many successes in controlling communicable diseases, and is building on the momentum of these successes. As always, the challenge lies in maintaining this momentum. Suriname continues the integration of certain vertical programs into primary care, especially the HIV and TB vertical programs as was initially done with the malaria control program as early as the 1950's.

HIV/AIDS

As of 2009, approximately 1.1% of the adult population (age 15-49) is estimated to be infected with HIV. Since the first reported case of HIV in 1983, an upward trend in the general population has been recorded, peaking in 2006, with 740 newly reported HIV positive cases as illustrated in Figure 15 *(55, 56)*. The peak in 2006 can partially be explained by the 'SabiLibi' (know your status) campaign held that year. It was followed by a decline in 2007 (638 new cases) that continued in 2008 (601 new cases) *(56)*. During 2008 more women than men were registered as HIV-positive (57.1%). However, it is important to note Suriname's policy to test pregnant mothers leads to higher testing rates among women. Of the 19,709 persons tested in 2008, 77.8% were women/girls *(57)*.

Figure 15: Number of Reported New HIV Positive Cases, 1983-2008



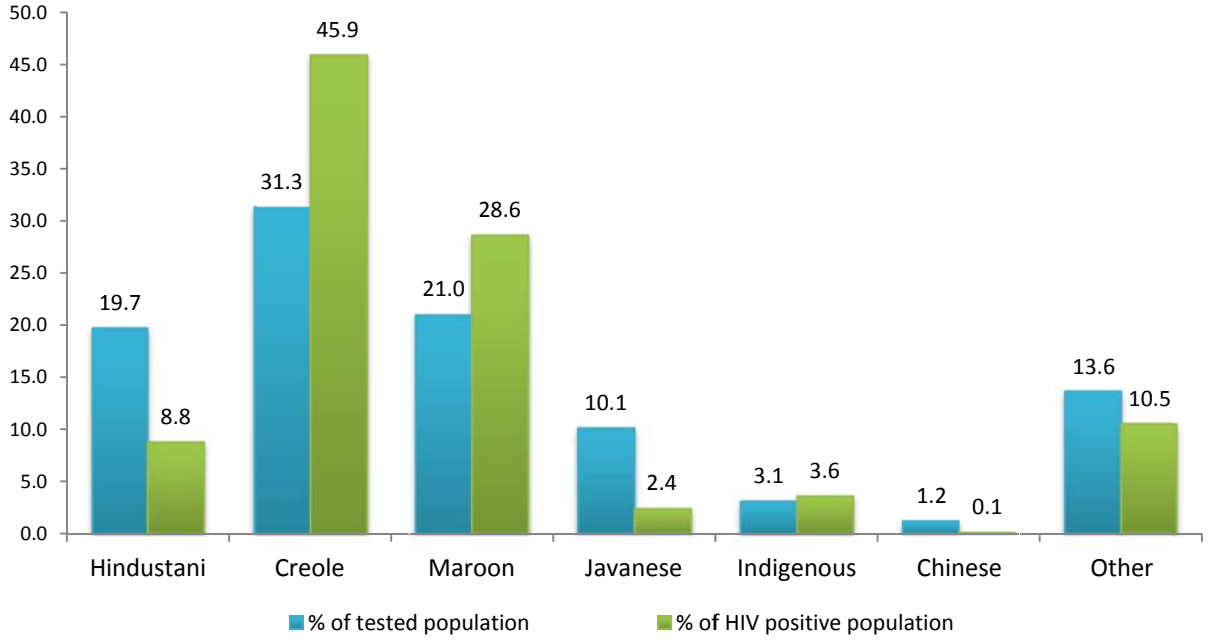
Source: Ministry of Health – National AIDS Program

Specific surveys among sex workers showed prevalence rates of 2.1% and 4.9% in the border towns Nieuw Nickerie (west) and Albina (east), respectively in 2008 *(58)* and 7.2% in Paramaribo in 2010 *(59)*. Additionally, a prevalence rate of 2.2% among prisoners was found in 2008 with 57.6% of prisoners tested, and 6.7% and 9.2% among men-who-have-sex-with-men (MSM) in 2005 and 2010 respectively *(59, 60)*. In previous years, data on specific cultural, socioeconomic, environmental and behavioural factors of population groups considered to be most-at-risk (MARPs) for contracting HIV have also been gathered. Currently the challenge is shifting the focus to using and analyzing the existing data on those populations to develop tailor-made intervention programs.

Since 2004, both Creole and Maroon groups have had higher prevalence of HIV, compared to their representation within the population, than other ethnic groups (Figure 16). Moreover, in 2008, of the 601 new HIV cases, the Creole and Maroon groups had the highest incidence of HIV: 255 (42%) and 153 (25%) cases respectively. The prevalence of HIV among the indigenous population should also not be disregarded *(56)*. In comparison to their rate among the total population and their share within the tested

and HIV positive persons, their prevalence appears relatively high. Figure 3 shows the ethnic distribution of the population.

Figure 16: Distribution (%) of tested and HIV positive population, by ethnicity, Suriname, 2008.



***Source*:** HIV data adapted from Table 2 in Surveillance Report.

When observing the distribution of ethnicity of the total population and within the total number of persons tested, it is apparent that the Creole and Maroon populations have relatively higher rates of being tested, in comparison to other ethnicities (Figure 16). Unfortunately information on these differences is incomplete to make a full comparison. Further research is needed to fully explain these disparities.

During the period of 2003-2008, the average HIV prevalence was 1.0% for pregnant women *(56)*. In recent years, the country has been successful in steadily increasing the treatment of HIV positive pregnant women with anti-retroviral medication (64% for 2006; 83% for 2008; 84% for 2009). However, challenges remain for the Prevention of Mother-To-Child Transmission (PMTCT) program, particularly the integration of the HIV databases and the (loss to) follow-up of pregnant women and their exposed children within the health care system. The loss to follow-up has the attention of the Ministry of Health who recently appointed a focal point to track all HIV positive pregnant women and exposed infants. In 2009, there were 95 HIV-exposed infants born of which 67 were lost to follow-up before the definitive diagnosis. Four infants were diagnosed as HIV positive in 2009. As an attempt to upscale the PMTCT program, the Ministry of Health adopted the PAHO initiative 'The elimination of vertical transmission of HIV and syphilis' and officially launched this initiative in 2009.

The percentage of adults and children with advanced HIV infection receiving antiretroviral therapy (ARV) steadily increased to 66% in 2008. However, this leaves a treatment gap of 34%. Research is needed to determine the main reasons for stopping, not receiving or not using treatment, and strategies to promote testing and offering of treatment need to be evaluated. The National AIDS Program intends to continue to reduce the treatment gap *(55, 56)*. The Ministry of Health includes the purchase of ARVs in the budget to guarantee the continuation of free ARV medication.

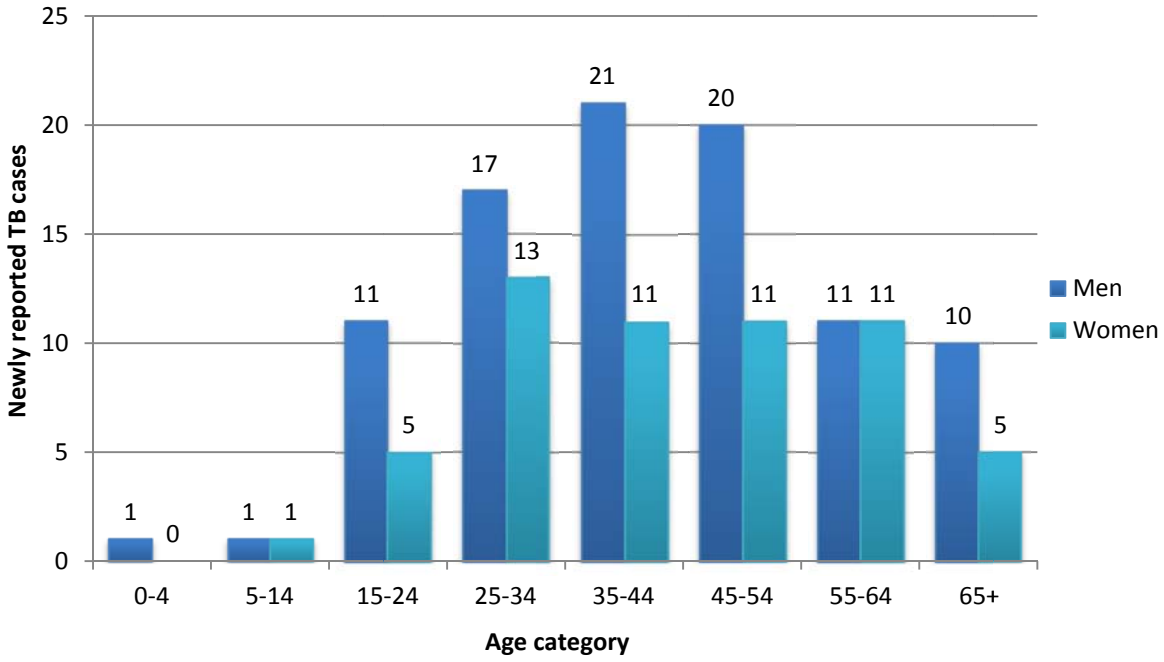
The annual death rate due to AIDS has decreased in the last years and AIDS dropped from fifth place in 2005 to sixth place in 2006 and 2007 (latest available data) on the list of most frequent causes of death *(56)*. The decrease is likely related to the percentage of individuals receiving antiretroviral treatment.

In order to guarantee the sustainability of the HIV program, the Ministry of Health is in the process of integrating this program in the general health system. According to the National Strategic Plan for 2009-2013 for HIV/AIDS a multisectoral structured approach is being developed *(61)*.

Tuberculosis (TB)

In the past, Suriname has had a successful TB control program, resulting in a very low prevalence of TB. The TB program registered 20 per 100,000 smear-positive TB cases in 2007. However, with the rise of the HIV epidemic, the number of TB cases increased from 82 cases (20 per 100,000) for 1990 to 177 cases (34 per 100,000) for 2009 with an overall tendency towards an overrepresentation of men in the adult age categories (62,63). This is illustrated in Figure 17.

Figure 17: Distribution of newly reported TB cases, by age and sex, Suriname, 2009.



***Source*:** WHO, TB data collection form for Suriname, 2010.

The estimated burden of TB disease by WHO in 2009 was 700 cases (135 per 100,000); under this estimate, potentially, only 25% of all cases are detected in Suriname *(62)*.

HIV/AIDS testing in TB patients has increased in the last ten years: in 2000-2003, 64% of TB patients were tested, in 2004-2008 this percentage increased to 77% and in 2009, 82% of the 177 reported TB patients were tested for HIV.

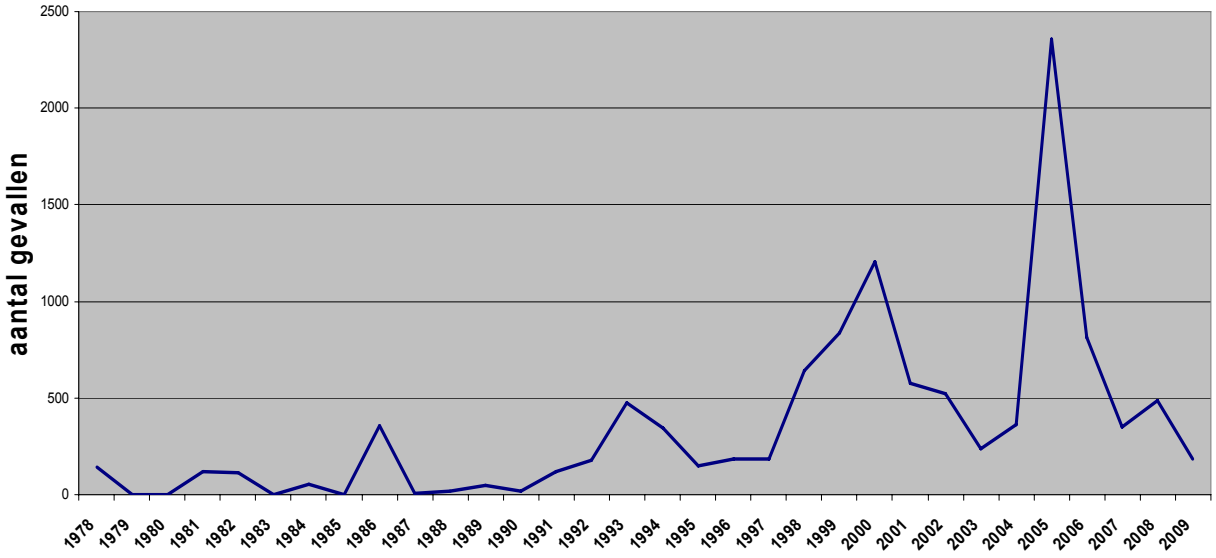
In 2000-2003, 23% of the tested TB patients were HIV positive, 2004-2008, 25% *(56)* and for 2009, 31% (49 of 154). Recently the agreement on the TB Global Fund proposal was signed with the Ministry of Health as Principal Recipient to strengthen the TB program with the introduction of a quality-assured DOTS strategy, focusing on strengthening TB/HIV collaborative activities, targeting TB control activities for high risk groups, building capacity for appropriate MDR-TB prevention and management, and developing community DOTS *(56, 64)*.

Dengue

Dengue is concentrated mainly in the coastal areas, including both rural and urban districts, with all four serotypes circulating. Each year a seasonal trend is observed related to the two rainy seasons from December to March and June to August. However, when observing the number of cases plotted over the

past 30 years, it is apparent that the numbers of cases also peak every 4 to 7 years with the peaks continuously increasing in size. As Figure 18 illustrates there is a particular sharp increase is noted during 2004-2007 with a peak in 2006, approximately double the size of the previous one (2000-2001). A possible explanation for this pattern may be climate change that expands the areas that are favourable for the dengue mosquito *(65)*.

Figure 18: Number of dengue cases, Suriname, 1978-2009.



***Source*:** Bureau of Public Health; Epidemiology department (MOH).

Data on dengue is reported through a sentinel surveillance system. The surveillance system needs to be expanded and strengthened to capture the true burden of disease.

Currently a vector control program with the support of the French Guianese authorities is being strengthened to include dengue larvae control. To further strengthen the program, health education, environmental sanitation and rational use of pesticides need to be promoted.

Malaria

In recent years, the malaria program has been successful in reducing transmission, the number of severe cases and associated deaths. Specifically, the reduction in transmission has been successful through targeted strategies against P.falciparum and for P.vivax with respective declines of 92% and 62% between 2000 and 2008 *(66)*. These strategies included the distribution of impregnated bed nets, mobile teams to test and treat gold miners, active case detection and treatment, house spraying, media campaigns and the re-impregnation of bed nets. Currently the coastal area, where the majority of the population lives, is free of malaria.

Official reports of 2005-2007 indicate that due to the marked reduction in malaria cases and no malaria-attributed deaths, Suriname has reached the malaria target for MDG 6 before 2015 (target: halted by 2015 and begun to reverse the incidence) *(28)*. As a result, in 2010 PAHO has declared the National Malaria Board of Suriname as the 'Malaria Champion in the Americas'. The next step will be to work towards elimination as described in the adopted resolution CD49.R19; Elimination of neglected diseases and other poverty related diseases.

The current transmission of malaria is strongly related to mining activities in the rural interior. It is estimated that there are at least 15,000 gold miners, with at least 6,000 Brazilians amongst them, along with Guyanese, French Guianese, Dominicans and different Surinamese ethnic groups *(67)*. The predominance of P.falciparum in Suriname and the proven success in reducing the transmission of

P.falciparum, indicates that the control of malaria can be reached with adequate and prompt treatment *(68)*. A prerequisite for elimination will be the collaboration with neighbouring countries, specifically Guyana, French Guiana and Brazil.

Neglected Tropical Diseases (NTDs)

The prevalence of all present neglected tropical diseases (Chagas disease, leprosy, leptospirosis, schistosomiasis, soil-transmitted helminthes (STH) are low and the Ministry of Health has indicated its commitment to the elimination of NTDs *(54)*.

Table 4: Overview of the status of NTDs compared to the elimination targets, Suriname.

NTDs	Elimination goals	Status
NTDs linked to resolution CD49.R19		
Chagas disease	• To interrupt domestic vector-borne transmission of T. cruzi (domestic triatomine infestation index of less than 1% and negative seroprevalence in children up to 5 years of age, with the exception of the minimum represented by cases in children of seropositive mothers) • To interrupt transfusional transmission of T.cruzi (100% blood screening coverage) • To integrate the diagnosis of Chagas disease in the primary care system • To prevent the development cardiomyopathies and intestinal problems related to Chagas disease.	• A 1997 study analyzed 800 blood samples from: blood bank routine collection (500), heart patients (100) and interior population (200). Results revealed 1 confirmed positive case among the Maroon population (prevalence 0.5%) in Brokopondo and 6 samples (3 among the blood bank routine collection and 3 among the interior population) indicated past exposure to T.cruzi • A 2005 study among 363 blood donors of the blood bank revealed no positive cases • Universal screening of donated blood not currently practiced.
Leprosy	To eliminate leprosy as a public health problem (less than 1 new case per 10,000 persons) from the first sub-national political/administrative levels.	The elimination target of 1 new case per 10.000 persons for Leprosy, set by the adopted resolution at the 1991 World Health Assembly WHA, has been reached. In 2009 38 new cases were detected (0.7 per 10,000) *(69)*.
Schistosomiasis	To reduce prevalence and parasite load in high transmission areas to less than 10% prevalence as measured by quantitative egg counts.	An overall prevalence of 8.7% (Enzyme-linked immunosorbent assay or ELISA blood testing; egg count testing during the same research yielded 0% prevalence) for schistosomiasis and 2.1% for STH (egg count), similar in both sexes and lower than the elimination target, were found in a 2009/2010 randomized study among 6th grade primary school children (median age 12 years) in 7 districts of Suriname. Nickerie (11.7%), Paramaribo (10.8%) and Coronie (10.5%) were districts with the highest prevalence for schistosomiasis; Brokopondo (7.1%) and Saramacca (3.9%) had the highest prevalence for STH *(70)*. Further research is needed to identify the underlying factors of the remaining low transmission to eliminate schistosomiasis and STH in Suriname *(70)*.
Soil-Transmitted Helminthes	To reduce prevalence among school-age children in high risk areas (prevalence >50%) to less than 20% as measured by quantitative egg counts.	
Lymphatic Filariasis	• To eliminate the disease as a public health problem (less than 1% prevalence of microfilaria in adults in sentinel sites and spot-check sites in the area) • To interrupt its transmission (no children between ages 2 and 4 are antigen	In the beginning of the 20th century, LF was mainly concentrated in Paramaribo. From 1949 onwards, a systematic control of LF was started in Suriname, which resulted in a decrease of the microfilaria index from 17.4% in 1949 to 0.06% in 1981.

NTDs	Elimination goals	Status
	positive) • To prevent and control disability.	Suriname is presently in the stage for certification of elimination *(71)*.
Other		
Leptospirosis	-	Between 2004 and 2009, the number of suspected cases of Leptospirosis has declined from 136 to 110 *(72)*.
Leishmaniasis	-	In 2010, the dermatology service in Paramaribo diagnosed 291 patients with cutaneous leishmaniasis, 89% of which were men. This could be due to a number of interrelated socio-economic determinants of health.

The MOH has recently extended the mandate of the Malaria Board to include NTDs. An integrated multisectoral approach and an integrated surveillance system for NTDs & malaria will be needed to reach and maintain the elimination goals for NTDs in Suriname.

Acute Respiratory Infections/Severe Acute Respiratory Infections (ARI/SARI), and Other Infections

Weekly sentinel surveillance is reported to CAREC, with notification of reported cases of acute flaccid paralysis and cases of rash and fever. Severe acute respiratory infection surveillance is also done in the hospitals, while ARI surveillance is reported from two coastal health clinics and one private physician and routine rotavirus survey is done in the hospitals in Paramaribo. The Central Laboratory of the Bureau of Public Health collaborates with the CAREC Reference Lab for local testing and transport of specimens.

Vaccine Preventable Diseases

The Ministry of Health is committed to the principles of the Expanded Program of Immunization (EPI) to bring a complete package of safe and timely vaccination to its population, specifically to protect the target groups against vaccine-preventable diseases. The Bureau of Public Health implements the program under technical guidance of the EPI Technical Committee, with representatives from the BOG, RGD, MZ, MOH, UNICEF, and PAHO.

Currently, the program covers the basic vaccinations for children 0 - 5 years, school children and pregnant women. Seasonal influenza and Influenza A (H1N1) were added to the program in 2009 and 2010 respectively. Introduction of Seasonal Influenza Vaccine in the regular program and a vaccination campaign with Influenza A (H1N1) vaccine resulted in low response of around 50% from the general population, including the specified target groups. As part of occupational health and safety initiatives, Hepatitis B vaccination is provided to all health workers.

The EPI Technical Committee has been commissioned by the Ministry of Health to advise the Ministry on immunization matters and to technically guide the vaccination program. Within this mandate, discussions are focusing on the introduction of new vaccines in the schedule including Rotavirus, BCG, Pneumococcus, and Human Papilloma Virus. The introduction of a national immunization database registry is currently being pilot tested.

Immunization coverage increased gradually over the past years, reaching a national average of 91.1% in 2009 for the 3rd dose of Pentavalent and OPV vaccinations and 89.6% for MMR vaccination. Yellow fever vaccination, only given in the rural interior, reached 78.6%. The last case of measles was reported in 1991 and there have been no reports of yellow fever or polio for decades. Three neonatal tetanus cases were reported in 2001 and 2 cases in 2003. Suriname is currently involved in the verification process of the elimination of measles, rubella and congenital rubella syndrome.

Despite high public awareness on the benefits of vaccination, pockets of low vaccination coverage still exist, specifically in the rural interior and in some coastal communities, as a result of movement of people between the urban and rural areas.

Moreover, there is a difference seen within and between the coverage in the service area of the Medical Mission and the service area of the RGD. The East Suriname Region shows the lowest coverage, which may be the result of cross border movement of the population to and from French Guiana, where the social benefits are better than in Suriname. In order not to lose these benefits, parents choose not to disclose the vaccination status of their children if the child was vaccinated at the other side of the border. Recently, an agreement was reached with the French authorities to share vaccine related coverage between both sides of the border.

The differences between the regions can be attributed to the difficult geographic accessibility of the services in the rural interior and migration of the population between the rural interior and the city.

The central reporting of the annual new births and a breakdown in Rayons (geographical division of RGD health regions), make it difficult to calculate the denominator for vaccination coverage; hence coverage figures need some caution during interpretation. Another factor of concern is that the statistics bureau and the vaccine implementing institutions use different geographical borders for districts.

The lack of a central immunization database results in incomplete data at clinic level, leading to children lost to follow-up in the system. The same explanation can be given for the difference in coverage between the RGD clinics in the coastal area and the over 100% coverage in some Rayons (Table 5).

Table 5: Vaccination coverage, by Region, Suriname, 2009.

Region/Rayon (number of people)	3rd Dose Pentavalent Vaccine and Oral Polio Vaccine	Measles/Mumps /Rubella	Yellow Fever
Upperland Amerindians & West Suriname (144)	81.3	93.7	92.3
Upper Suriname(599)	89.6	87.9	78.0
Brokopondo (361)	104.2	87.4	82.4
Central Suriname (38)	55.3	74.3	57.1
East Suriname (432)	43.3	69.3	72.5
Average Medical Mission (1574)	78.7	83.5	78.6
Rayon I (1061)	83.4	88.4	
Rayon IIA (1093)	96.4	93.1	
Rayon IIB (614)	131.2	101.3	
Rayon III (1434)	96.8	89.7	
Rayon IV (1051)	95.8	102.2	
Rayon V (486)	109.5	83.7	
Rayon VI (175)	68.4	62.3	
Rayon VII (162)	117.4	78.1	
Rayon VIII (479)	86.9	92.0	
Average RGD (6555)	95.8	92.0	
National Average (9834 includes private clinics)	91.1	89.6	

Note : Yellow fever vaccine only administered in the rural interior by MZ;
Pentavalent vaccine includes: Diphtheria, Pertussis, Tetanus, Hepatitis B, Hemphilus Influenzae b.

Health over the Life Course

Sexual and Reproductive Health

Sexual and reproductive health (SRH) addresses the processes, functions and systems related to sexuality and reproduction at all stages through the life course.

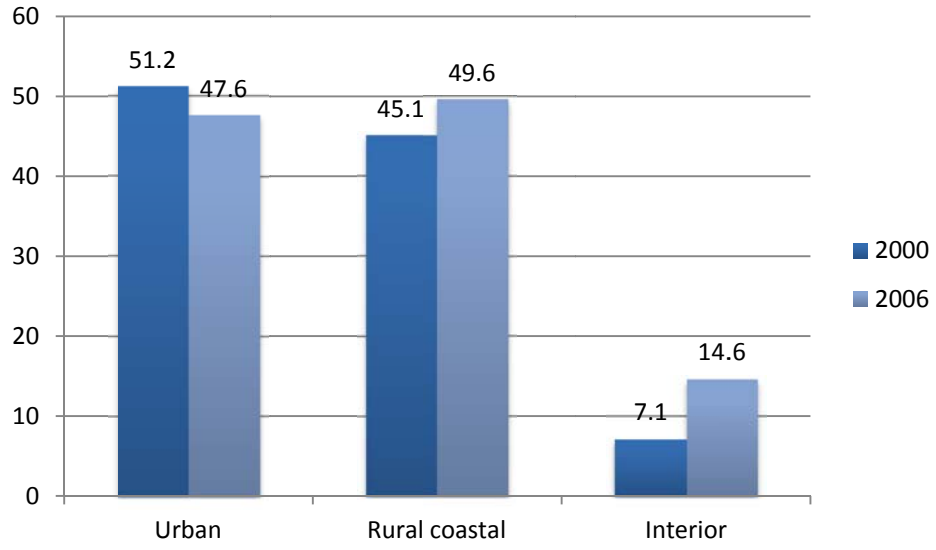
According to the 2004 census, the total population in the reproductive age (15-49 years) is 264,145 (134,147 men and 129,866 women).

Provision of family planning services lies mainly with the Lobi Foundation, an International Planned Parenthood Federation (IPPF) affiliate, and the Mother & Child clinic at 's Lands Hospital. Family planning services at the clinics of the RGD and MZ are limited to the provision of oral contraceptives that can also be obtained over the counter at every pharmacy.

The use of oral contraceptives is the most widely practiced family planning method. Currently preparations are underway to introduce the WHO Decision Making Tool for Family Planning.

Several studies show that among young people there is a disparity between contraceptive knowledge and ideas and contraceptive use *(73)*. In 2006, the national contraceptive prevalence rate was only 45.6% (all methods), with considerable disparities between urban (47.6%), rural coastal (49.6%) and rural interior (14.6%) *(17)*. Figure 19 illustrates contraceptive rates by region in 2000 and 2006. Limited access to and availability of contraception and the effect of culture and traditions, such as the high value placed on fertility and motherhood, and the overall lower education levels of the people in the interior results in low contraceptive prevalence rate among women in the interior *(74)*.

Figure 19: Contraceptive rates, by Region, Suriname, 2000-2006.



Women's education level is strongly associated with contraceptive prevalence. The percentage of women using any method of contraception rises from 14.3% among those with no education to 38.4% among women with primary education to 51.0% and 56.0% among women with secondary education or tertiary education respectively *(17)*.

Almost half (48.9%) of women between the ages of 15-24, who engaged in sex with a non-regular partner within the year, reported using a condom. However, when disaggregated by education level, about 17% of women with no education reported using a condom during higher-risk sex, while over half (about 54%) of the women with secondary education or more reported using a condom during higher-risk sex *(17)*. As noted earlier, the greatest disparities in education are seen in the interior. This illustrates one of the main

challenges that persist in closing the geographical gap, such as the limited access to information and education in general regarding sexual health and rights in the interior, as well as cultural and traditional beliefs surrounding sexuality and sexual practices (e.g. the high value of early childbearing among maroons).

High-risk sexual behaviour is most prevalent in women aged 20-24 in the rural interior by almost double the national average and the same population is almost five times as likely to engage in sexual intercourse before the age of 15 *(17)*.

The satisfied demand for contraception is 71.3%. The total unfulfilled need, which is highest among women with no or primary education, is 18.4% for the country but is 33.2% within women aged 15-49 living in the rural interior *(17)*.

Abortions

At present, abortion is illegal under the Surinamese Penal Code, with exceptions made for medical indication where the life of the woman is in jeopardy. However, an estimate by Stichting Lobi suggests the number of annual abortions is between 8,000 and 10,000, with a strong representation of women under the age of 24 *(75)*. This implies an almost 1:1 ratio with annual live births. The use of 'traditional' abortion methods remains unreported. There are diverse traditional methods, practiced by different ethnic groups, varying from massage techniques (Javanese) to the use of herbs (Maroons). Only those cases where the traditional and other risky non-medical methods resulted in complications can be detected as they appear at the emergency ward of the Academic Hospital. For these reasons, reliable figures on the incidence of abortion cannot be obtained. Post-abortion care is non-existent and would provide the opportunity for counselling and for research regarding the background and determinants.

Maternal Health

Virtually all pregnant women receive some type of prenatal care; 99.4% were reported as visiting a prenatal clinic at least once *(76)*. During 2006, skilled health personnel (doctors, midwives and auxiliary midwives) attended 89.8% of deliveries. Assistance by traditional birth attendants was 1.2% and community health workers assistance was 3.3% *(8)*. The majority of deliveries (88.3%) took place in health facilities *(77)*. The number of live births increased slightly from 9,062 in 2004 to 10,100 in 2008.

Maternal Mortality

Between 2000 and 2009 the Maternal Mortality Ratio decreased from 153/100,000 live births to 122.5 /100,000 live births *(37, 78)*. The MDG target for Suriname is 75/100,000 live births, as the baseline was determined from 226/100,000 live births for 1990 *(79)*. The absolute number of maternal deaths is small, as the total number of live births does not exceed 10,000/year.

The Maternal Mortality Ratio for Latin America and the Caribbean is 87/100,000 live births *(80)*.

The leading causes of maternal mortality in Suriname are:

- Pregnancy Induced Hypertension and the associated disorders (20 %);
- Complications of labor and delivery (16%);
- Abortive outcomes of pregnancies (12%);
- Complications related to delivery (7%);
- Complications related to puerperium (7%) *(78, 81).*

The national capacity in emergency obstetric care, the registration system, and maternal mortality case investigations, needs strengthening in order to keep the mortality rate as low as possible.

Although the national fertility rate declined from 7.10 in 1964 to 5.51 in 1972, 3.57 in 1980 and 2.52 in 2004, there are significant differences between the experience of various socio-economic and ethnic groups *(28)*.

Infant mortality

Table 6: Child mortality indicators, Suriname, 2000, 2005, and 2009.

CHILD MORTALITY INDICATORS	2000	2005	2009	CHILD MORTALITY INDICATORS	2000	2005	2009
Estimated Mid-interval Population	463,837	499,009	524,143	Total Births	10,044	8,857	9,987
Live Births (CBB)	9,804	8,657	9,792	Birth Rate (per 1,000 pop.)	21.9	17.7	18.6
Deaths occurring during the year (CBB)	3,090	3,392	3,293	Mortality Rate (per 1,000 pop.)	6.9	6.8	6.3
Perinatal Deaths	351	307	321	Perinatal Mortality Rate (per 1,000 births)	35.8	34.7	32.1
Still Births (Epi BOG)	240	200	195	Still Birth Rate (per 1,000 births)	23.9	22.6	19.5
Early Neonatal Deaths	111	107	126	Early Neonatal Mortality Rate (per 1,000 live births)	11.3	12.4	12.9
Late Neonatal Deaths	20	12	31	Late Neonatal Mortality Rate (per 1,000 live births)	2	1.4	3.2
Neonatal Deaths	131	119	157	Neonatal Mortality Rate (per 1,000 live births)	13.4	13.7	16
Post Neonatal Deaths	67	54	42	Post Neonatal Mortality Rate (per 1,000 live births)	6.8	6.2	4.3
Infant Deaths	198	173	199	Infant Mortality Rate (per 1,000 live births)	20.2	20.2	20.3
Deaths in Under Fives	267	214	240	Under Five Mortality Rate (per 1,000 pop.)	27	24.7	23.3
Deaths in Children 1-4 yrs	69	41	41				

***Source*:** Ministry of Health. National Health Information System.

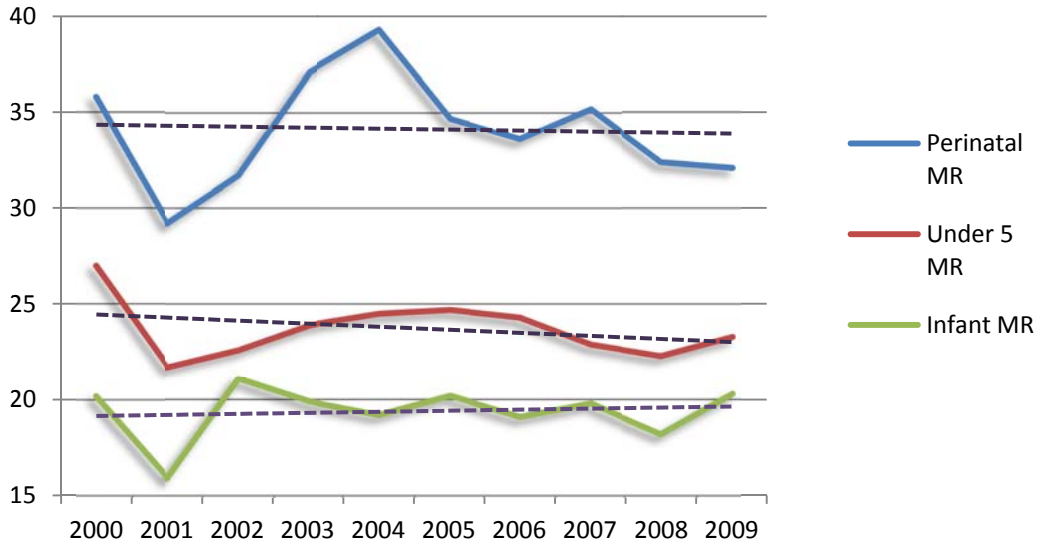
In Suriname, the MDG target for infant mortality in 2015 is 7.0, based on the 1990 baseline of 21.1 *(79)*. As we progress towards 2015, the infant mortality rate (IMR: the number deaths among children aged twelve months or less per 1000 live births) was similar in 2000 and 2009, at 20.2 and 20.3. These rates are comparable to other non-Latin Caribbean countries *(31)*. For this age group, the main causes of death during 2000-2009 were respiratory diseases (29%), congenital malformations (34%), bacterial sepsis (15%) and slow fetal growth (13%). Further investigation of infant mortality, reveals specific patterns for perinatal mortality, neonatal mortality, and postnatal mortality.

The perinatal mortality rate (PMR: the number of deaths after the 28th week of pregnancy or in the first seven days after birth per 1000 live births) decreased from 35.8 in 2000 (351 deaths) to 32.1 in 2009 (321

deaths). Correspondingly, the number of stillbirths decreased from 240 (stillbirth rate: 23.9/1000 live births) in 2000 to 195 (stillbirth rate: 19.5) in 2009 *(37, 42, 82)*.

The neonatal mortality rate (the number of deaths during the first 28 days of life per 1,000 live births) has increased from 13.4 (131 deaths) in 2000 to 16.0 (157 deaths) in 2009. Neonatal mortality can be subdivided: early neonatal deaths and late neonatal deaths. The early neonatal mortality rate (deaths occurring during the first seven days of life per 1,000 live births) in 2009 was 12.9 (126 deaths), up from 11.3 (111 deaths) in 2000. Additionally the late neonatal mortality rate (deaths after the seventh day but before the 28 completed days of life per 1,000 live births) in 2000 was 2.0 (20 deaths) and increased to 3.2 (31 deaths) in 2009 *(77)*. In contrast, there was a decrease in the post-neonatal mortality rate (the number of deaths after 28 days but before one year per 1,000 live births); the rate decreased from 6.8 (67 deaths) in 2000 to 4.3 (42 deaths) in 2009. Trends in infant and child (under 5) mortality rates are shown in Figure 20 for 2004 to 2009.

Figure 20: Child Mortality Rates, Suriname, 2004-2009.



Child Mortality

According to the 2004 census data, Suriname had a total 0-4 year population of 51,837 (26,233 boys and 25,567girls) and a total of 5-9 year population of 49,409 (25,195 boys and 24,206 girls). From 2000 to 2009 the main causes of death in the age group 1 – 4 years old were external causes (accidental drowning, accidental suffocation, traffic accidents) and infectious diseases (respiratory infections, sepsis, gastrointestinal infections, and HIV).

Data from 2009 indicates that child mortality (deaths within the first five years of birth) has decreased in Suriname; the under-five mortality rate (U5 MR) in 2009 was 23.3 (240 deaths), a decrease from 27.0 (267 deaths) in 2000. The 2015 MDG target for under-five mortality rate is 10.0, based on the 1990 baseline of 31.0 *(79)*. Trends in mortality rates for children under 5 for 2004 to 2009 are shown in Figure 20.

Annually, about 15 deaths occur among 5-9 years from 2000 to 2009 and the main causes of death were external causes (accidental drowning, accidental suffocation, traffic accidents) and infectious diseases (respiratory infections, sepsis, gastrointestinal infections, HIV).

Adolescent and Youth Health

According to the 2004 census data, Suriname had a total population of 135,494 (68,766 men and 66,680 women) in the 10-24 years age group (youth), specifically 91,651 (46,336 men and 45,281 women) in the 10-19 years age group (adolescents).

In 2007 the total number of deaths was 72 (crude rate: 53.1 per 100,000), 50 men (72.7 per 100,000) and 22 women (32.9 per 100,000). External causes were the main cause of death among youth. The second cause of death was HIV/AIDS, with 9 deaths, 2 men, and 7 women.

This indicates that the focus for mortality and morbidity should be on the (risk) behaviours of adolescents: unsafe sexual practices resulting in unplanned pregnancies and contraction of STIs (including HIV), substance abuse and violence and injuries.

The 2009 Suriname Global School-based Student Health Survey (GSHS) among 1,698 students of 13-15 years not only identifies the main risk behaviours, but also gender differences: boys reported a higher percentage of current (past 30 days) smoking (12.5%) than girls (8.6%), drinking (35.6%) vs. than girls (30.0%), and drinking excessively (21.0%) girls (9.0%). Although girls show a slightly higher percentage in ever tried smoking (80.9%) than boys (76.3%). The percentage for trying alcohol is almost the same at (74.2%) for girls and (73.7%) boys *(23)*.

Boys show a higher percentage (30.4%) of involvement in physical fights than girls (12.3%) and unintentional injuries (37.1%) than girls (23.6%). While girls show a higher rate of considering suicide (15.7%) than boys (11.4%) and actual suicide attempts (11.1%) than boys (4.2%).(23) Regarding completed suicides in 2009, the percentage of girls is higher between the ages of 10 – 14 (3 girls and 1 boy), and 15-19 (6 girls and 5 boys) *(37)*.

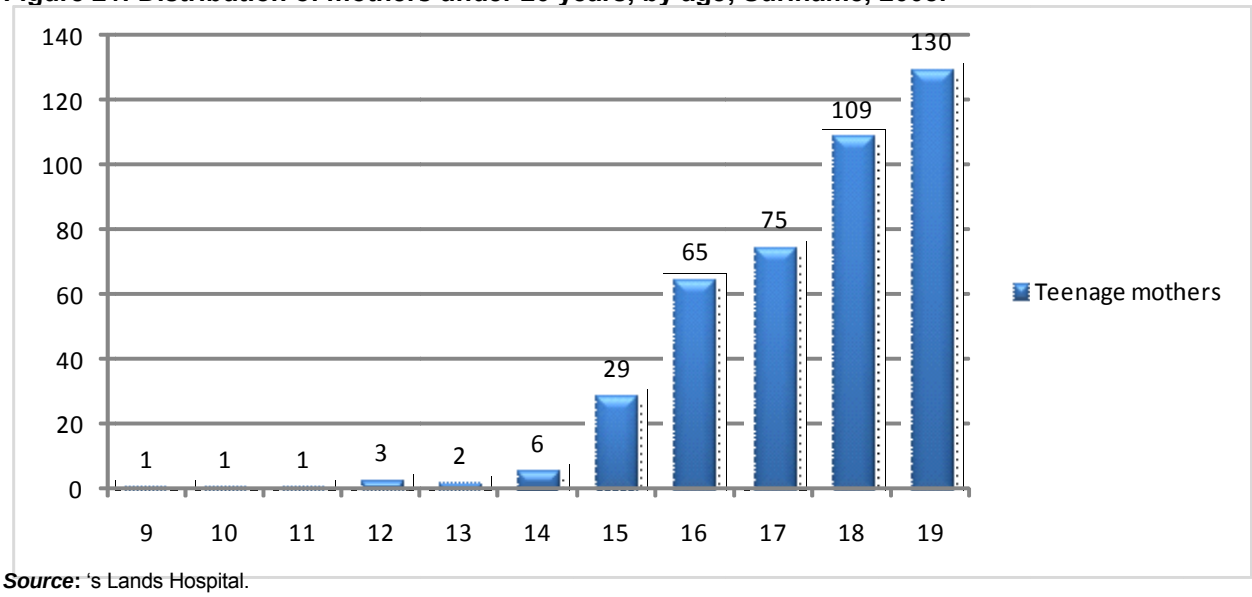
Boys have a higher score in engagement in sexual intercourse (31.9%) than girls (18.3%) and 24.4% of all students already had sexual intercourse. Among these, the percentage that used a condom the last time they had intercourse was 71.6% *(23)*.

Sexual risk behaviour is demonstrated by contraction of an STI (incl. HIV) and/or unplanned pregnancy. Both outcomes result from absence or inconsistent condom use. The adolescent birth rate showed a slight decrease from 64.6 in 2003, 63.1 in 2004, to 58.4 in 2005 and 58.5 in 2006, and then increased to 62.4 in 2007 *(8)*.

Teenage pregnancies accounted for 16.1% of all pregnancies between 2003 and 2007 (*28*). Close to half (44%) of sexually active women between 15 and 19 years have been pregnant at least once. Three quarters of these pregnancies were unplanned, as were 56% of the pregnancies in the age group 20 – 24 years.

A study in ‘s Lands Hospital shows that from a total of 2,315 deliveries, 18% were to mothers between the ages of 9 and 19 years, with an average age of 17 *(83)*. Although this is not a national representation, it is a valuable indication of the deliveries among adolescents, as the highest percentage of births take place in ‘s Lands (40.2% in 2004) *(84)*. This same report also revealed that not all teenage pregnancies are unplanned or unwanted. This is mainly due to cultural traditions *(83)*. The distribution of ages of teenage mothers is shown in Figure 21.

Figure 21: Distribution of mothers under 20 years, by age, Suriname, 2008.



***Source*:** 's Lands Hospital.

A "Pilot Pathfinders Survey" in August 2004 (*85*) among children of 4, 12 and 15 years provided a national average of Decayed, Missing and Filled Teeth (DMFT) that is higher in the peri-urban and rural areas, indicating that there is better dental health in urban areas. The report concluded that the dental health situation in children under 4 years old is a reason for concern. The study recommended a thorough survey on "feeding bottle caries" and preventive/educative programs for parents, as well as a preventive dental program in day care facilities, kindergarten and consultation bureaus.

Health of the Elderly

According to the 2004 census, the urban, rural coastal and rural interior have population rates of 8.8%, 8.6% and 7.7% respectively for people over 60 years of age.

A focus group study in 2004 *(86)* indicated the need to further explore the relationship between the provision, or the lack, of "integrated health services" and the health and well-being of the elderly population. Available day care centers, adequate elderly homes and affordable home-care do not meet current demand for these services. There is also a need for better-organized logistics and support services, including supply of medications, transportation to and from the clinic, and simplified administrative procedures (e.g. to obtain a social-medical card). The study also suggested further examination of relevant factors that influence the organization, management, and delivery of integrated health services within the PHC system.

Further actions should lead to a better understanding of the supportive role of community based care as a means to improve access and utilization of services, and to identify factors that may accelerate decline or disability as individuals age.

The living conditions of the elderly population in the rural interior deserve special attention due to insufficient basic services, including water and food supply, sanitation and special geriatric care.

2.4 National Responses to Overcoming Health Challenges

National Development Process and Policies

Commitment to Achieving the Millennium Development Goals

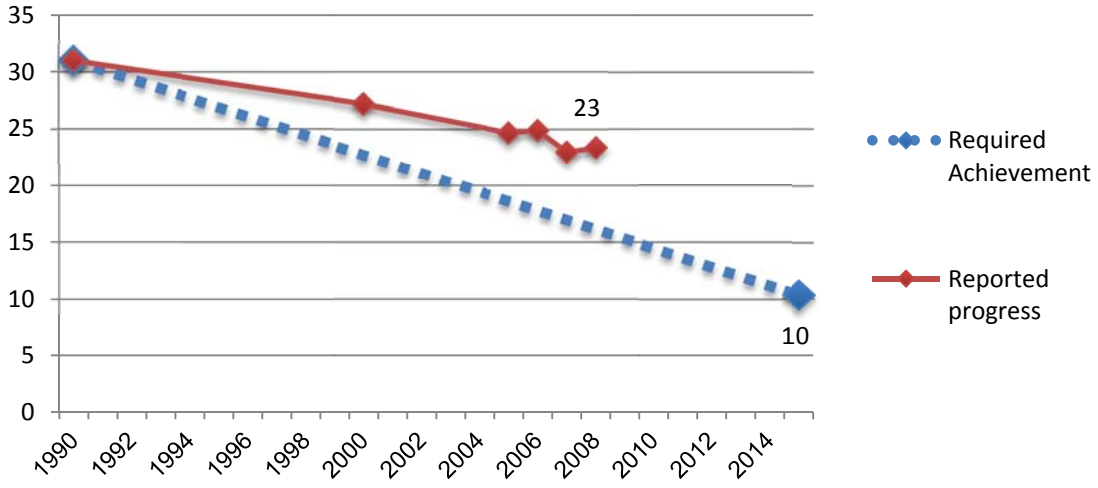
In 2010, the government produced the MDG Progress Report 2009, which indicated that almost all MDGs had a 'probable' or 'potential' chance of attainment *(8)*. The Ministry of Health also published an update

on all health related MDGs (MDG 1, MDG 4, MDG 5, MDG 6, MDG 7 and MDG 8) which summarized the progress and challenges towards their attainment.

Of the targets that are most on track, Target 1c, to halve, between 1990 and 2015 the proportion of people who suffer from hunger, has illustrated a downward trend as reflected in the prevalence of underweight children under-five between 2000 (15.1%) *(87)* and 2006 (9.9%) *(17)*.

Progress towards MDG 4, Reduction of Child Mortality, shows a steady trend with slight decreases, however the child mortality rate remains visibly off track towards the desired target of a reduction of two-thirds by 2015 (Figure 22). The barriers of access to adequate services and suitable support infrastructure, specifically in the remote areas have proven to be a major challenge to the achievement of this goal. This highlights the need to improve integration of preventative primary care and public health education on basic life skills *(8)*. Barriers and challenges require adequate assessment and response in the area of child mortality in order for MDG 4 to be met in 2015.

Figure 22: Under-five mortality rate and the MDG Target 4, Suriname, 1990 and 2015.



Target 5a, the reduction of the Maternal Mortality Rate (MMR) has shown a significant decline from 226 (per 100 000 live births) in 1990 to 153 in 2000 *(87)* to 122.5 in 2009 *(37)*.

Most notably, Target 6c, to have halted by 2015 and begun to reverse the incidence of malaria and other major diseases has been met for malaria with a dramatic decline of Annual Parasite Incidence (API) associated with malaria (per 1000 of population in high risk) from 342 in 1995 to a rate of 30 in 2008 *(87)*. The death rates associated with malaria have dropped from 5.9 (per 100 000 of population) in 1995 to 0 in 2008 demonstrating further excellence in the public health initiatives in the area *(87)*.

Challenges remain within MDG 6 however. The prevalence of HIV has increased from a reported 0.3% in 1990 to 1% in 2008 *(87)*. The reported incidence of Tuberculosis also remains off-track with an increase in both incidence (from 20.1 to 22.1) and death rates (0.9 to 2.1) between 2000 and 2008.

Systematic and routine collection of data on the indicators requires strengthening. Currently, the progress on the MDGs is tracked through annual statistic yearbooks and the MICS, done every 3-4 years, resulting in gaps in information and data, and limiting the analysis on the actual progress of each indicator.

International Health Regulations (2005)

In June 2007, the International Health Regulations (2005) (IHR) came into force and all WHO Member States, including Suriname, should adhere to these regulations. The Member States have until June 2012

to build, strengthen and maintain the 13 capacities under these regulations. Adherence to IHR has proven to be a priority of the Ministry of Health. The Bureau of Public Health has been designated as the National Focal Point to be accessible at all times for communications for the IHR (2005). Much work has been done, but further strengthening is needed in the eight core capacities (national legislation & policy, coordination, surveillance, response, preparedness, risk communication, laboratory, human resource capacity for surveillance and response). Strengthening is also needed in the five IHR capacities for potential hazards (infectious disease, zoonotic event, food safety event, chemical event, radiological event and nuclear event) as well as for the one IHR capacity regarding the point of entry.

National Health Policies, Strategies and Plans

The last Multiannual Operational Plan (MOP) 2006-2011 is coming to an end and the new Government is currently working on the new MOP 2012-2016.

The MOH has started to discuss new health priorities, and has embarked on discussions on strategic objectives with stakeholders. This reflects the Government's philosophy to focus on strengthening the health system to provide increased prevention of the burden of disease described in the previous pages.

As a part of these discussions, PAHO/WHO Suriname Country Office has worked very closely with the MOH to bring the different agendas together into a broader, more strategic discussion of health priorities which includes:

- The National Health Disaster Plan (developed by the MOH with PAHO/WHO's assistance was signed by all stakeholders during World Health Day 2009.)
- The National Strategic Plan for 2009-2013 for HIV/AIDS
- The National Strategic Plan for Tuberculosis
- Malaria Reduction Plan
- Other plans currently being developed are the Mental Health Plan by PCS, National Strategic Plan for prevention and control of Cervical Cancer and the Water Master Plan
- Other legal documents under revision are the Medical Laboratories Legislation, currently being discussed by stakeholders and the draft NCD policy, and is expected to be approved in 2011.

Furthermore, the MOH collaborated with a variety of agencies on inter-sectoral policy initiatives that impact the country's health situation, such as:

- The National Road Safety Plan, approved in 2010, was developed by the National Road Safety Committee;
- The "Integrated Gender Plan of Action 2006-2010" was elaborated by the National Gender Bureau;
- The "Safety Act", passed in 2002, provides women with 12 weeks of maternity leave and unpaid paternity leave following the birth of a baby;
- The "Employment Act" of 2002 eliminates discrimination in the workplace against those living with HIV.

2.5 Health Systems and Services, and the Response of Other Sectors

Leadership and Governance

While the constitution establishes health as a basic right, the law does not establish the right to public health care. However, existing legislation establishes the roles and functions of the Ministry of Social Affairs and Housing (SOZAVO) and the Ministry of Health (MOH) including references to government-provided medical care for selected categories of the population *(44)*.

At present several National Policies and Plans have been enacted related to health at both the national and ministerial level. The "Health Sector Plan 2004-2008: *Health care: everyone's concern"* is still in use. In 2009, the "Priority Establishment for Sector Plan Health Care 2009 – 2011" followed, but was never

enacted. The priorities established by the MOH have been focused on increased prevention and primary health care with emphasis on NCDs, malaria and dengue, HIV and improving immunization coverage.

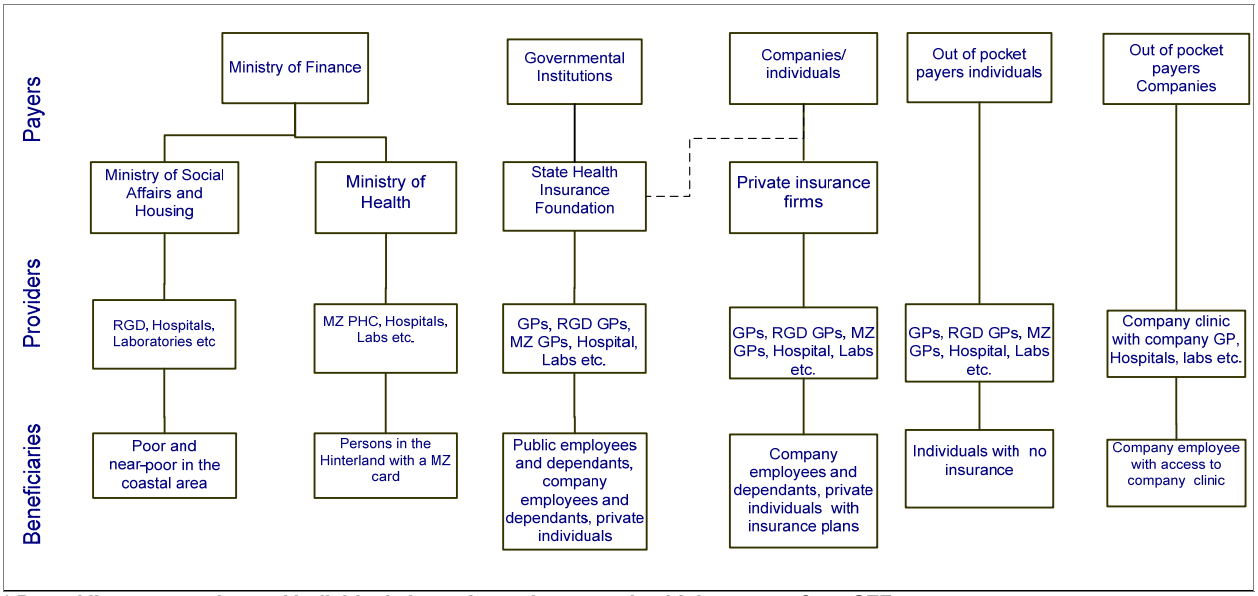
The leadership and governance of the health sector is the responsibility of the Ministry of Health, which is tasked with health care policy design, legislation and adherence; implementation; supervision and surveillance; accessibility and availability of services throughout the country, including medicines and health products *(88)*; and the general care of the population and the social security system. The MOH faces three main challenges in leadership and governance. Firstly, the coordination of a variety of providers, institutions and settings (public and private) ensures a holistic approach to services and secondly, the integration of targeted, disease-specific programs into existing structures and services achieves better and sustainable outcomes. Finally, the MOH must ensure health in all public policies in order to address underlying determinants at local, national and international level. Additionally the MOH must strengthen the professional knowledge, staffing and resources to support, through policies, the effective role of steward of health.

In its steering capacity the MOH is in charge of coalition building, accountability, regulations, incentives and attention to system design. This requires improved planning capacity and efficient coordination to promote inclusion of health considerations in all policies and to advocate effective implementation across sectors to maximize health gains. The effective exercise of the steering role (according to PAHO definitions) will require the harmonization of service provision and the ability to coordinate various providers and users' groups in order to extend health care coverage equitably and efficiently *(89, 90)*.

Organization of the Health System

The health system is segmented and fragmented[6] with the coexistence of subsystems (Regional Health Services, Medical Mission, and private providers), with different modes of financing, membership, and delivery of health care services, with each subsystem specializing in different population segments, depending on geographic location, employment, income level, ability to pay, and social status (Figure 23).

Figure 23: Overview of payers and providers in the health system, Suriname, 2011.



*** Dotted line: companies and individuals have the option to get health insurance from SZF**
***Source*:** Discussion with national experts.

[6] *Fragmentation*: in the service delivery system refers to "the coexistence of various units or facilities that are not integrated into the health network."

Primary Health Care (PHC)

The health care system in Suriname is partially organized based on the principles and values of Primary Health Care (PHC). There is wide spread acknowledgement of the need to extend the first level of the health system and to enhance vertical coordination (with general and specialized hospitals) as well as horizontal coordination (with other sectors) in order to protect and to promote the health of defined communities and to address individual and population health problems at an early stage *(91)*.

MOH is working towards a renewal of PHC, with an emphasis on increased outreach and strengthening the referral system through the 'gatekeeper' status of General Practitioners (GPs) and primary care workers that has earmarked the movement towards PHC. Also there is a push towards the empowerment of the front line PHC health workers to appropriately promote and prevent, based on the new risk factor profile, NCDs and to diagnose and treat patients in the early stages of disease as a measure of cost effectiveness and to address the burden of disease by acting on underlying determinants.

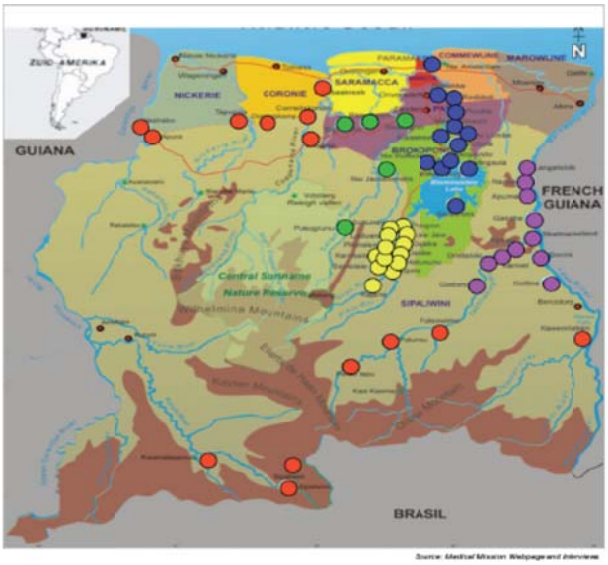
First Level of Care

Primary care or first point of consultation in the country[7] is provided by the Medical Mission in the interior, Regional Health Services in the rural coastal areas, and either Regional Health Services or General Practitioners (Huisarts) in the more densely populated urban region (Wanica, Nickerie and Paramaribo). Particularly in the interior, traditional medicine practitioners continue to provide primary care to some segments of the population.

Medical Mission Primary Health Care (MZ)

The Medical Mission (MZ) was formed from a group of religious NGOs, is funded by the government, and provides first-level care for residents of the rural interior living in traditional settings along the main rivers, many only reachable by river or small aircraft. Health care is provided via a network of polyclinics coordinated by the Jan van Mazijk Coordination Center in the capital city of Paramaribo. The field of operation is the rural interior of Suriname including the districts Brokopondo, Sipaliwini and part of Para (See Map). The geographical working area of the Medical Mission stretches over a 130.000 square kilometres area populated by approximately 60,000 people in the rural interior *(92)*.

Map: Medical Mission Clinics (93)



The MZ runs 56 health clinics and health posts that provide an average of 60,000 patient-visits annually (4 visits per post per day) *(77).* Six general practitioners supervise the clinics and health posts (an average of 9 clinics per GP). Three of these clinics function as Health Centers with beds: Marowijne - Stoelmanseiland Hospital (15 beds), Djoemoe Hospital (16 beds), and Health Centre Brownsweg (6 beds) *(77)*.

The service delivery of the MZ is based on Primary Health Care principles, which implies a comprehensive approach addressing people's basic health needs. In practice the focus is primarily on

[7] Primary care is commonly considered to be a patient's first point of entry into the health system. Primary care providers are focused on early diagnosis and timely, effective treatment but have greater potential for referral to secondary care. Primary health care is a strategy of public health, derived from the social model of health and sustained by the Declaration of Alma Ata.

treatment of acute illnesses presented at the clinics *(92)* and it must be prepared to address the NCD epidemic.

The mission of MZ is to "promote and sustain the physical, mental, social and emotional wellbeing of the population in the hinterland of Suriname", and it provides deliveries of new-borns and preventive health services such as antenatal consultations; dental care and prevention. Telephone consultation of medical specialist and emergency transportation are also provided.

The health posts also provide education on breast-feeding, malaria, sexually transmitted diseases (including HIV), safe drinking water and sanitation.

The system used for the provision of health services at MZ is based on health assistants, mid-level health workers recruited from local communities who are trained by the MZ over four years. Once employed in the field, they are supervised by physicians and nurses (clinic heads, regional managers, auxiliary departments in the Coordination Center) by means of regular radio communication and supervisory visits *(92).*

Regional Health Service (RGD)

Regional Health Service (RGD) is a state foundation which offers health care via public primary care facilities that are staffed by general physicians and health practitioners who provide primary care services to residents of Suriname's coastal areas. Persons who are classified as "the poor and near-poor" by the Ministry of Social Affairs (SOZAVO) utilize the RGD services the most. State Health Insurance Foundation (SZF) enrolees also may choose an RGD doctor as their general practitioner *(94)*. The challenge remains to protect and promote health through intersectoral action.

RGD manages 43 Health Care Facilities with about 64 general practitioners working for them. Three of these health posts *(77)* have beds: Coronie Hospital (8 beds), Commewijne – Health Centre Ellen (1 bed), and Health Centre Albina (9 beds) (94). The newly built clinic in Geyersvlijt is planned to be a comprehensive primary health care center.

Private Clinics

Private clinics operate mainly in the urban areas and are supported through private insurance schemes or out-of-pocket payments (OOP). Most GPs in the country are in private practice. The GPs provide services to people who are covered by the SZF, Ministry of Social Affairs, Private Insurances, Private Companies or self-paying patients.

Another modality of health care providers is private firm clinics that many large corporations, public and private, run for their employees. The funding and services provided by these clinics differs considerably among firms. In the 2000 National Health Accounts it was calculated that they covered almost one third of all employees working in the private sector. Government owned enterprises do not fall under civil service regulations and have working arrangements similar to employees in private firms.

Youth Dental Foundation (JTV)

The Youth Dental Foundation (JTV) provides dental prevention, coaching and treatment services for youth aged 0-18 years and general dental services to the population at large. JTV cooperates with RGD and has 40 dental units in 26 clinics of the RGD. Annually, about 40,000 children and 5,000 adults are treated through 30 locations in the country and 15 units at the head office in Paramaribo.

Hospital Care (Secondary and Tertiary Health Care)

Five hospitals operate in the country, four in Paramaribo and one in Nickerie. One psychiatric hospital (PCS) operates in Paramaribo. The Lands Bedrijf Academisch Ziekenhuis (AZP), the academic hospital, is the only hospital in Paramaribo with an emergency department (SEH). The hospital in Nickerie also has an emergency department. The other hospitals offer basic specialist care, somewhat broader in

dimension. Academisch Ziekenhuis (AZP) and the 'sLands Hospitaal (LH) are government hospitals and Diakonessen Ziekenhuis and Sint Vincentius Ziekenhuis (SVZ) are private hospitals.

Table 7: Number of hospital beds, Suriname, 2009.

Hospital	Number of beds in 2009
Academisch Ziekenhuis Paramaribo (with ER)	482
's Lands Hospitaal	346
St. Vincentius Ziekenhuis	210
Diakonessen Ziekenhuis	204
Streekziekenhuis Nickerie (with ER)	101
Total	**1,343**
Psychiatric Centre Suriname and Children's pavilion	289

***Source*:** General Bureau for Statistics. Statistical Yearbook 2009. Paramaribo; November 2010.

Table 8: Organization of Health Services, Suriname, 2011.

Level of Service	For population in the coastal area	For population in the interior
Health education/ Preventive care	• BOG provides health care education and preventive care. • RGD clinics provide family planning services and immunizations • RGD also provides health education on nutrition, breast feeding and basic sanitation together with the under 5 clinic activities and the PNC	MZ provides immunizations and health education on nutrition, breast feeding and basic sanitation
First level of care	• RGD clinics and private practitioners provide ambulatory services to patients subsidized by SOZAVO and affiliated to SZF, patients with private insurance, and patients paying out of pocket. • Independent practitioners and company-owned health services provide private ambulatory services. • Hospital practitioners provide primary care at outpatient departments. • Primary mental health care is provide at PCS	MZ provides publicly subsidized services, including medical care for illnesses, prenatal care, delivery care, health care for children under five and emergency care.
Secondary care	• Three general public and two general private hospitals and 1 psychiatric hospital provide inpatient and ambulatory procedures by specialists.	MZ patients are flown primarily to Diakonessen Hospital in Paramaribo. In some cases patients may go to AZP or LH.
Tertiary care	• Kidney dialysis is provided by public and private sector. • A cancer treatment center is being established in Paramaribo • For other services patients need to travel abroad.	
Other	• NGOs such as the LOBI Foundation provide a range of services including sexual and reproductive health care, health education, preventive care and primary care for targeted audiences.	

Health Infrastructure

The Ministry of Health is committed to optimize the planning and management of health facilities and infrastructure for safe and effective delivery of quality health care and services in order to tackle modern health challenges, such as the non-communicable diseases epidemic, and to enhance health equity.

As analyzed in previous pages the current installed capacity in the country can be summarized as:

- 56 MZ primary health clinics and health posts;
- 43 RGD Health Care Facilities;
- 146 private clinics;
- 5 hospitals (2 private and 3 public) and 1 psychiatric hospital;
- 40 dental units located in 26 of the RGD clinics;
- 3 private medical laboratories and one medical laboratory in every hospital;
- 1 public Health laboratory;

- 10 retirement homes and two small nursing homes.

The health infrastructure needs to meet the increasing demand of health care and the need to enhance the social determinants of health and prevention in a changing context. Future investments consider long-term need and innovative approaches for ensuring equitable access to care through rural hospitals, increased number of rural primary policlinics and the building of nursing homes.

Health Workforce

Expansion of physical infrastructure also means the health workforce needs to be increased and the challenges of maldistribution as well as retention need to be addressed. Like other countries in the sub-region, Suriname has a shortage of health care professionals to meet its needs. The health workforce in the country is driven by supply, rather than demand or service needs and until now there has been no connection between the number and mix, of human resources produced and the job market.

With the new health challenges, special efforts are needed to ensure and sustain the supply of all key groups of health workers including managerial positions at all levels of the system. Training more doctors, nurses, health assistants and other care categories, including nursing assistants and caregivers for the elderly, and through the use of Cuban medical doctors will help alleviate the current human resources for health (HRH) gap.

The MOH has noted that in the short term there is a pressing need for radio-diagnosis and therapy assistants, nurses trained in dialysis, diabetes, HIV, intensive care, and training of midwives. Special attention must be paid to environmental health through the training of 100 new assistant environmental inspectors.

Forty new pharmacy assistants and 40 new midwives need to be trained over the next 4 years, 60 medical specialists and 60 health professionals specialized in Public Health need to be trained over the next 10 years. The new training opportunities are already in motion.

While Suriname fares relatively well in terms of physicians in comparison to regional benchmarks, there continues to be a shortage of some specialties such as radiologists, anesthesiologists, trauma specialists and public health professionals.

The mix of specialists in the country shows some challenges as well. Although the number of specialists per 100,000 people differs from country to country and there are no clear standards, there are certain clear imbalances such as the ratio of anesthesiologist (11) to surgeons (58) and a gap in certain disciplines, such as trauma, infectious diseases or geriatrics, required to take care of health needs present in the country (Table 9).

Table 9: Numbers and rates of Health Professionals, by category, Suriname, 2010.

Category	Number	Rate per 10,000 population
GP in private practice	191	3.8
GP in public services	70	1.3
Registered Nurses	895	17.9
Nursing assistants	542	10.8
Health assistants	234	4.7
Midwives	53	1.1
Practical nurses	112	2.2
Anesthesiologists	11	0.2
Bacteriologists	1	0.0
Cardiologists	7	0.1
Clinic Chemists	1	0.0
Dental Surgeons	1	0.0
Dentists	24	0.5
Dermatologist	4	0.1
Ear, Nose and Throat Specialist	2	0.0
Gynecologists	11	0.2
Internists	17	0.3
Medical biologists	1	0.0
Medical Microbiologists	1	0.0
Neurologist Surgeons	2	0.0
Neurologists	4	0.1
Ophthalmologists	7	0.1
Orthopedists	5	0.1
Pathologists	2	0.0
Pediatricians	11	0.2
Pharmacists	31	0.6
Plastic surgeons	2	0.0
Psychiatrists	7	0.1
Pulmonologists	1	0.0
Radiologists	3	0.1
Rehabilitation Specialists	1	0.0
Surgeons	9	0.2
Urologists	4	0.1

***Source*:** General Bureau for Statistics. Statistical Yearbook 2009. Paramaribo; November 2010.; CMO's office information.

The majority of health workers are concentrated in the coastal urban areas, particularly in Paramaribo. The mix and distribution of human resources in the country is as follows:

- In primary care 64 general practitioners work for RGD in 43 clinics in the coastal area; 6 general practitioners work for MZ supervising 56 primary care clinics in the interior; and 191 private general practitioners work in 146 private clinics, most of them located in Paramaribo and Wanica. 140 medical specialists work in the hospitals. The distribution of human resources between urban and rural areas is disproportionate with 5 GPs per 10,000 population in the coastal areas and 1 GP per 10,000 in the interior *(95)* and the driving forces need to examined and addressed.

- Most of the registered nurses (approximately 82%) work in secondary care facilities located in the two main urban centers and the rest (18%) in primary care, teaching, nursing homes, and public health. Only 1.4% of the nurses are employed by the Medical Mission in association with its primary care program in the interior.

Human Resources Training

Even though higher education is heavily subsidized by the government, at present there is insufficient strategic health manpower planning for the public sector or dialogue between the supply (ADEK) and demand (MOH) sides.

Most general physicians receive training at Anton de Kom University (ADEK) Faculty of Medical Sciences, which has a limited admission of 40 students per year and graduates, on the average, about twenty physicians per year, most of whom elect careers in clinical medicine.

The Institute of Graduate Studies and Research (IGSR) at ADEK was founded in March 2006 as a forerunner of the Faculty of Graduate Studies (FGS). Suriname is actively working to develop a cadre of trained public health professionals through the signed memorandum of understanding between ADEK and Tulane University's School of Public Health and Tropical Medicine. In 2007 the training in Masters in Public Health started with 20 students. By mid-2012 these students will graduate. The memorandum also commits the institutions to cooperation in areas including exchanges of faculty members for research, lectures and discussions; exchanges of research scientists and graduate students for study and research; training scientists and public health professionals in basic and applied research; carrying out joint research activities; and exchanging information such as library materials and research publications. A second MPH course has already started.

Registered nurses and nursing assistants are trained at the Central Training Institute for Nurses and Allied Professions (Foundation COVAB). Two hospitals (AZP and St. Vincentius) have internal training courses for nurses. Midwives are trained at the midwifery school of the Ministry of Health. Currently there is only one generation of Bachelor of Science in Nursing with specialization in hospital management, pediatrics and Public Health that was formed through an agreement with the Karel de Groot Hogeschool in Antwerp in 2007.

In 2007 the Government started the Bachelor of Science training in Health Education. This four-year course is meant to provide experts in design, coordination and monitoring of health promotion and disease prevention programs. The course is accommodated by the Teachers Training College (IOL) as collaboration between the Ministry of Health and the Ministry of Education.

The loss of skilled labour due to out-migration has been significant, with the Netherlands remaining the preferred destination. The external migration of skilled professionals is affecting several sectors of the society, particularly health and education, resulting in acute shortages of human resources and the deterioration of some public services. Additionally, the CARICOM Free Movement of Persons Act will likely have an effect on people, particularly skilled workers moving in and out of Suriname.

Registration and Certification

Physicians, nurses, midwives and pharmacists are registered and certified by the Ministry of Health. Physicians are licensed through the Ministry and require permission from the Director of Health for clinical practice. Regional licensing and accreditation are currently under review. Paramedical professionals currently have no regulations or statutes for official registration or certification.

Health Funding and Financing

The main source of funds in the Health Sector comes from the Ministry of Finance (37.5%), followed by the private companies with 34.1%, and the Household Out of Pocket expenditures (HH-OOP) with 20% *(96).*

The Ministry of Finance (MOF) collects taxes, allocates budgets to the MOH and manages contributions to the State Health Foundation (SZF).

The MOH provides subsidies to a number of institutions such as RGD, MZ, and PCS, and pays directly for public health programs including Youth Dental Services (JTV). The MOH also provides public health services through the Bureau of Public Health (BOG), the Bureau of Alcohol and Drugs (BAD) within the PCS, and the Dermatology Service Department (DSD). Other bodies subsidized by the Ministry of Health include the Central Training for Nurses and Related Occupations (COVAB), the Kidney Foundation Suriname (NSS) with the kidney dialysis center, and the blood bank.

There are several insurance schemes. The main three are the State Health Foundation (SZF), the programs from the Ministry of Social Affairs and Housing (SOZAVO), and private insurance.

The SZF covers all government employees (40,891 civil servants and their dependents in 2010). SZF insurance is also available to the general public. The SZF is responsible for paying claims to providers for all insured services received by the SZF-covered population.

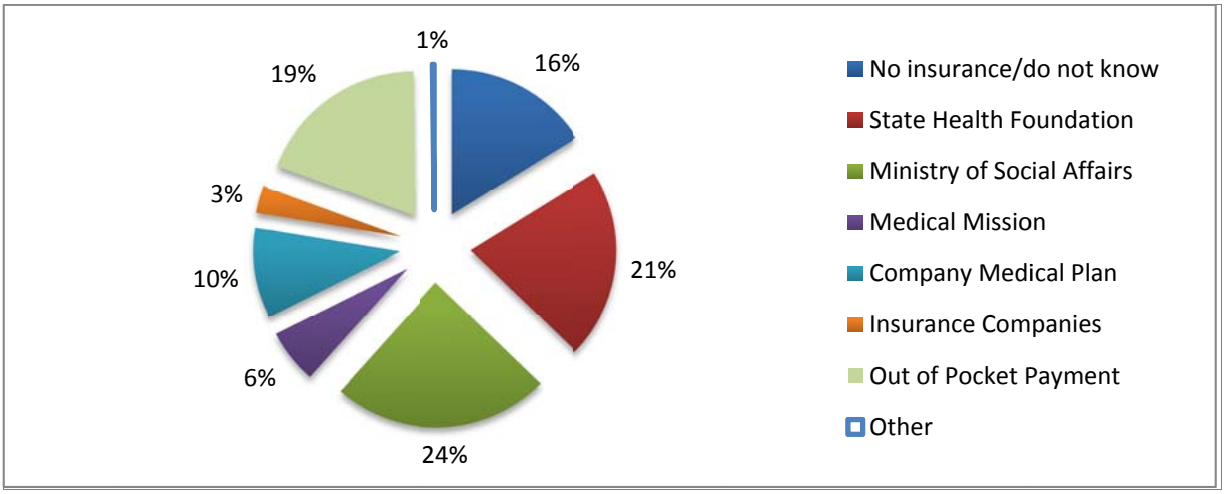
SOZAVO, the largest government funder of health care (SRD107 million) *(97)*, provides for the poor and near poor, ensuring that the economically disadvantaged population has access to State subsidized healthcare. The poor and near poor population can request a health card for free access at the government hospitals and clinics. For the most part SOZAVO funds secondary care, while primary care is funded by MOH and provided by RGD.

Individuals and families with no access to SOZAVO or SZF insurance, access private health services via a private insurer, a company health clinic or paying out-of-pocket (OOP).

As mentioned previously, the population in the interior does not have health insurance because residency alone qualifies them for MZ care and access health services provided by MZ, which is subsidized through the Ministry of Health. They receive specialized care in Paramaribo funded by SOZAVO, however the cost of staying in the city can be high and prohibitive for access to care.

The distribution of population coverage is shown in Figure 24.

Figure 24: Population (%) with health insured by a plan, Suriname.



Source*: *Ministry of Health. National Health Information System.

Total Health Expenditure

The Total Health Expenditure (THE) is 163,508,436 USD or 8.5% of the GDP. The distribution of public and private expenditures of the THE in 2006 were 42.6% by the public sector, 53.8% by the private sector, and 3.6% by non-governmental organizations (NGOs) *(96)*. It is to be noted that according to the

NHA health expenditure per capita increased dramatically from 180.33 USD in 2000 to 324.26 USD in 2006 *(96)*.

According to the National Health Accounts 2006, health expenditure was focused on curative care while the first level of care received the lowest allocation of resources: hospitals 35.0%, followed by private general practitioners with 12.6%, pharmaceuticals 11.5%, medical specialists 9.2%, laboratory services 4.8%, dentists 3.9% and the RGD 3.3% *(28)*.

The contribution of the private sector to health care is significant and out-of-pocket expenditures of households have become an area of concern. In view of the financial and access inequalities in health, the government has stressed the importance of finding new ways to sustain the health system and design policies for redistribution of resources to meet health needs, reduce financial barriers and protect against the financial risk of using health care *(98)*. The MOH is proposing the introduction of a national health insurance, the AZV.

The government has recognized the need for detailed measures to be taken into account such as the design of the model of provision, priority setting, cost calculations, human resources component and the reorganization of providers, with emphasis on efficiency measures in the hospitals.

Insufficient information on the quantity of financial resources used for health, their sources and the way they are used make it challenging for the MOH to make informed decisions, develop policies, and make financial projections of the health system requirements.

Health Information Systems

Effective clinical management and policy decision-making require quality, comprehensive and meaningful information and the skills and knowledge to interpret and use this information. The National Health Information System (NHIS) Unit of the Ministry of Health is responsible for official national health data.

While there have been considerable strides and considerable investments over the last several years to strengthen NHIS, there is still a need to improve the way information is extracted, analyzed, packaged, made available and used to aid informed decision-making across the health system.

Most of the health information reaches the NHIS Unit through:

- Surveillance reports from the BOG, RGD, MZ, professional health associations and the medical registry of the hospitals;
- Monitoring and Evaluation reports from the different programs such as malaria, HIV/AIDS and Tuberculosis;
- Surveys such as MICS, tobacco surveys.

The Sentinel Surveillance data is used for trend analysis and for reporting to CAREC and others. The mortality surveillance is used for in-depth analysis for policy development, decision-making and evaluation of progress made in executing the condition specific plans and programs. An operational national health information system is needed that extends from the primary to central level in order to improve surveillance, monitor performance and supply the substrate for evidence-based decision-making and that includes all service providers. Capacity building is needed for information analysis and updated infrastructure of hardware and software and in addition, human resources and financial challenges remain.

Clinicians, administrators, managers and policy makers need quality, comprehensive and meaningful information to make strategic decisions. Nevertheless, there seems to be insufficient strategic use of the data. The challenges for the NHIS are related to the use of health information, data warehousing and triangulation of data. Analysis of data also needs to be strengthened with the purpose of decision-making and policy-making.

The main challenges with regards to health information are:

- Need to establish a framework for data collection regarding;
    - Routine collection of morbidity data, harmonized at all levels;
    - Routine collection of outpatient information at the hospital level;
    - Routine collection of data on tertiary care;
    - Routine data collection on risk factors, such as dietary behaviour and physical activity;
- Integrate demographic, socio-economic and environmental indicators in the information system *(77)*.

Medical Products and Technologies

In a rapidly globalizing world, generation of technologies and infrastructure requires long term planning and policy to make ethical and effective use of innovations in medical technology and pharmaceuticals.

Laboratories

All hospitals have laboratories and 3 privately operated laboratories, Medlab, My Lab and Health Control also carry out clinical analyses. National Authorities are developing the first national regulations for Medical Laboratories on the basis of the Final Report on the Preparation of Model Legislation for Medical Laboratories in the Commonwealth Caribbean, prepared by CAREC in December 2006.

The Public Health Laboratory at BOG (Central Lab) opened its new facility in 2010 with upgraded technological capacity. Central Lab is the referral lab in country for malaria, TB, and HIV/AIDS and does quality control and confirmation of tests done by other labs. It carries out the public health analyses in the following areas: entomology, chemistry, parasitology and bacteriology. The central lab is also the only lab that has IATA certified shippers to send and transport (pack and ship) test material (specimens) to referral labs abroad.

The Public Laboratory meets the quality and biorisk international standards level II+ and high technology levels in terms of equipment. One area where Central Lab requires upgrading is laboratory information systems. The MOH envisions an international role for the Central Lab as a referral public health lab in the Caribbean region. Highly trained human resources for the laboratory remain a challenge. This lab is proposed to be part of the CARICOM subregional laboratory network.

Pharmaceuticals

The Ministry of Health central office, the Pharmaceutical Inspectorate, and the Bureau of Public Health are responsible for pharmaceutical policies, standard setting, inspection and monitoring, and program development. 90% percent of all drugs are imported and 10% are manufactured internally. The Governmental Committee on Drug Registration must approve all drugs, while the Pharmaceutical Inspectorate oversees inspection of pharmaceutical manufacturing and pharmacies. There are three licensed pharmaceutical manufacturers in Suriname and 26 licensed pharmaceutical importers, the largest being the government-owned Drug Supply Company Suriname (BGVS). For BGVS, the value of imported medicines was approximately USD 5 Million in 2007 *(88)*.

The country has limited capacity for Research and Development for discovering new active substances and the production of active pharmaceutical ingredients (APIs), which could be considerable given the vast untapped rainforest, but there is capacity for the production of formulations from pharmaceutical starting material and for the repackaging of finished dosage forms. The BGVS is responsible for importing, stocking, and distributing essential pharmaceuticals that are sanctioned by the Board for Essential Pharmaceuticals. The BGVS also does elementary testing of drugs and pharmaceuticals *(99)*.

The Essential Medicines List (EML) defines which medicines will be provided to insured patients for a fixed co-payment. The co-payment for most patients insured by SZF is SRD 2 per item while senior citizens pay SRD 0.50 per item. Some civil servants are not required to pay for prescriptions on the EML *(88).*

Out of 31 pharmacists in Suriname, eight are not currently in the dispensing practice. An in-country 3-year vocational training program for pharmacy assistants has supplied over 160 trained pharmacy assistants *(88)*.

Blood Bank

Suriname has 100% voluntary blood donations, which accounts for the good quality and low risk of the blood received at the Blood Bank which is operated by the Red Cross and subsidized by the MOH. The Blood Bank collects approximately 10,000 blood units per year and functions as the only blood and derivatives supplier in the country. Screening is performed for HIV-1/2, Hepatitis B virus, Hepatitis C virus, HTLV-1/2, *Treponema Palladium* and malaria as part of international quality assurance.

Response of Other Sectors to Address the Other Determinants of Health

The determinants of health significantly influence health status in Suriname. While there is a lack of official reporting structures and linkage of health with existing data of different health-related sectors, unofficially there is reasonable cooperation with other sectors and there are several activities currently on-going which positively influence health.

Table 10: Coordinated intersectoral action to enhance the determinants of health and health equity, Suriname, 2011.

Sectors	Activity
Ministry of Finance	• Financing of the health sector
Ministry of Education	• Promoting healthy schools and providing health programs • Basic Life Skills program (incl. HIV prevention) • School health care services • University, Medical faculty and MPH program
Ministry of Sport and Youth Affairs	• Physical activity for the total population especially the youth
Ministry of Agriculture, Fishery and Husbandry	• Food safety and Food security
Ministry of Natural Resources	• Safe drinking water
Ministry of Trade and Industry	• Laws , regulation and guidelines regarding trans fats, salt and sugar for healthy food and for pharmaceuticals, tobacco
Ministry of Justice and Police	• Disaster preparedness policy and a specialized disaster unit, linked to health • Domestic violence prevention, suicide prevention, road safety and drugs and tobacco prevention
Ministry of Public Works	• Domestic waste collection • Increase of basic sanitation • Maintenance of roads, canals, etc…
Ministry of Transport, Communications, and Tourism	• Significantly improved telecommunications for the rural interior • Road safety
Ministry of Social Affairs	• Financing health care of the poor and near poor
Ministry of Defence	• Disaster management; Military Hospital
Ministry of Spatial Planning, Land and Forestry Management	• Planning for sport and recreation in neighborhoods
Ministry of Labor, Technology and Environment	• Occupational safety and health • Environmental Health (NIMOS)

Source: Health Sector Planning Workshop, January 23-24, 2011; Begroting 2011 RvM – Dr C.W. Waterberg.

Addressing determinants of health is increasingly on the political agenda and in order to be successful, the capacities, roles and responsibilities of other sectors will need to be clearly and accurately defined. Human resources (maldistribution, retention and shortage) is a central concern to ensure continuity and health impact.

2.6 Suriname's Contribution to the Global Agenda

Suriname's recognition of the importance of health to the achievement of sustained and equitable development is evidenced by the actions for improving health in the country. Experiences that can be shared with the Caribbean sub-region, the Amazonian countries, South America and beyond include:

- Communicable diseases are near elimination, with the leprosy elimination target of 1 case per 10,000 persons in 2009 and approaching the state of elimination for Schistosomiasis and Soil Transmitted Helminthes.
- The National Malaria Board led many successful initiatives that resulted in a near 90% decrease in malaria. The country was recognized by PAHO as a Malaria Champion in 2010.
- The country established the HIV Board and Center of Excellence and through the National AIDS Program reached the majority of HIV positive women with the PMTCT program in 2008, reaching elimination targets for MTCT.
- The decentralization of responsibilities and tasks implemented in the Medical Mission model of care has proven successful in reaching the communities in the rural interior. The model is one of community-based primary care centers implemented by health assistants with supervision by physicians and nurses by means of regular radio communication and supervisory visits.
- The new Public Health Laboratory at BOG has upgraded technological capacity and meets the quality and biorisk international standards level II+ and high technology levels in terms of equipment that can be considered a referral public health lab in the Caribbean region and beyond.
- A Radiotherapy Center at Academic Hospital has been equipped to provide treatment for cancer patients and is expected to start functioning in mid 2011. Training of specialists will guarantee the in-country capacity for radiotherapy treatments that could eventually develop in a referral center for smaller countries in the region.
- Suriname has a diverse multi-ethnic and multi-cultural society, reflecting its colonial past and modern migration flows. Suriname occupies a unique position as a member of CARICOM and a country of the continent of Latin America. The historical population linkages with India, Indonesia, Africa, China and Europe also provide unique opportunities. Lessons learned in achieving this balanced approach are increasingly relevant in the current context of globalization and tensions in some developed societies.

2.7 Similarities with Other Countries

Regionally, Suriname is generally categorized as Caribbean due the similarities in cultural composition in the coastal area. Many of the health issues in the Caribbean are shared such as HIV, NCDs and the challenge to produce and retain Human Resources for Health.

Sub-regionally, Suriname naturally links to neighbouring countries such as Brazil, Guyana and French Guiana. As part of the Guyana Shield, Suriname and neighbouring countries share similar key characteristics in terms of groups that deserve special attention such as those small societies living in the rural interior who have distinctive cultures and languages. The Amazonia also shares similar economic, health and technological development. Further links can be made with Guyana and Belize because of the ethnically diverse and multicultural populations.

From the historic past to present day, Suriname and the Netherlands are affiliated, economically and politically, though present day relations are distancing. In addition to the current and historical ties between Suriname and the Netherlands, other countries, such as Guyana, Belize, French Guiana and Brazil relate to Suriname due to the health challenges they face and other countries such as China, India and Indonesia because of the historical, ethnic, commercial and cultural links. Reviewing their country

actions and best-practices regarding HIV, PHC, NCDs, would prove beneficial for the Country. Suriname recently qualified as a medium human development rank, linking closer with countries such as Bolivia, Paraguay, and El Salvador (12).

2.8 Summary

Key Health achievements, opportunities and challenges
Achievements/opportunities
▪ Health is high on the national agenda, as health is a pillar of the constitution, emphasizing the responsibility of the government to promote and protect health. ▪ Key actors in the health system recognize the need for an efficient and equitable health system and are focusing on strengthening Primary Health Care. ▪ The Medical Mission model is designed specifically to reach interior populations to deliver primary care and improve access to care. ▪ Significant progress has been made regarding communicable diseases, as the status of many diseases are near or have reached elimination targets, specifically the success of being recognized as PAHO's 2010 'Malaria Champion of the Americas'. ▪ Death rate due to AIDS has decreased and the National AIDS program has been effective in increasing HIV testing rates among women through the PMTCT program, increasing the treatment rate of HIV positive pregnant women. ▪ Nearly all pregnant women receive prenatal care during their pregnancy. ▪ New Public Health Laboratory has upgraded technologies and meets quality and bio-risk international standards level II+. ▪ Radiology Center at Academic Hospital is equipped to provide treatment for cancer patients starting in 2011.
Challenges
▪ Changing demographic profile and population characteristics have resulted in a shift from communicable diseases (CDs) towards an increasing burden of non-communicable diseases (NCDs). ▪ The increasing burden of non-communicable diseases and related risk factors continue to negatively affect health status. ▪ The current political environment is uncertain and economic circumstances are changing (i.e. global economic crisis etc.). ▪ There have been improvements in progressing towards the MDGs, however progress has been limited, including in infant mortality and neonatal mortality; significant work will be required to reach the Millennium Development Goals. ▪ Awareness on the determinants of health is increasing, however, more information and data is needed to address the determinants in planning and programming. ▪ Migration is a twofold problem: immigrating individuals tend to work in mining areas where NTDs persist, while those emigrating are highly educated, reducing the knowledge base and capacity within the country.

3. Development Cooperation and Partnership

3.1 The Aid Environment in the Country

Historically, the Netherlands was the principal development partner in Suriname. At independence on 25 November 1975, the Dutch Government donated 2.5 billion Dutch Guilders (~ 1.5 billion USD) to ease the political transition. The funds were expected to finish in 1985; however, due to political instability during the 1980s and 1990s, the aid flow was interrupted. After negotiations during 2001, the funds were re-established and the aid finished during 2010.

Over the last few years, there has been an increased presence of other development partners in Suriname, including bilateral cooperation. For example, China is providing funding supporting a road rehabilitation project, as well as the development of low-cost housing in Paramaribo. Similarly, India has become an important development partner in Suriname focusing on the steel mill, rice breeding and construction of solar powered traffic signal systems. The Cuban medical brigade began working in Suriname 2007. The brigade is comprised of approximately 200 health professionals including nurses, GPs, and specialists in anesthesiology, internal medicine, pediatrics, pharmacology, epidemiology, nurses specializing in extracorporeal dialysis and one electro medicine technician. The Cuban brigade is distributed in coastal areas and places that are hard to reach as well as in the capital of the country. The "Milagro project" is one of the results of the Cooperation Agreement between Suriname and Cuba whereby Cuban doctors carry out the ophthalmology services.

The increased presence of new partners is also evident in the health sector. Development partner agencies focusing on health include the Global Fund, US PEPFAR and International Development Bank (IDB), as well as countries such as France and Brazil.

3.2 Stakeholder Analysis

UN Agencies

Four UN Agencies are present in Suriname: PAHO/WHO, UNICEF, UNFPA, and UNDP. PAHO/WHO is the only agency with full representation and has the longest presence in the Country. The UN Resident Representative is based in Trinidad, so the PAHO/WHO Representative is the highest placed UN staff in the country. The other resident organizations have increased their size and presence over the last few years. Since all resident agencies have been focusing in varying degrees on health, in 2010 PAHO/WHO has taken the lead through a health mapping exercise to clarify roles and responsibilities.

The UNICEF (working under representation from Guyana) approach to health emphasizes improving maternal and child health, specifically in the rural interior. Additional program areas focus on strengthening information and data systems to facilitate reporting of health achievements (e.g. MICS).

UNFPA (working under representation in Jamaica) focuses on gender (gender-based violence, population dynamics and sexual and reproductive health), youth/adolescent health (teenage pregnancies and HIV transmission) and knowledge generation.

The UNDP's (working under representation in Trinidad and Tobago) work in Suriname related to health focuses on democratic governance, poverty reduction, HIV/AIDS, crisis prevention and recovery and energy and environment. More information on the Delivery as One process of the UN Suriname can be found under Section 3.4.

Bilateral Collaboration on Health

The following countries have diplomatic missions in Suriname: Brazil, China, Cuba, France, Guyana, India, Indonesia, Netherlands, Venezuela, the United States of America and the EU.

Economic opportunities, particularly related to mining, have increased the movement of people between Brazil and Suriname, heightening concerns regarding migration, environmental and occupational health

related to mining. Consequently, the Brazilian Consulate's approach towards health is focused on providing materials for reducing the burden of HIV/AIDS, linking malaria experts to develop health projects, reducing mother to child transmission of syphilis, and mitigating the spread of Chagas disease. Additional activities include supporting the provision of lunches in schools and supporting food safety measures, such as improving the packaging and conservation of food products.

Suriname highlighted the positive relations with Cuba by opening an embassy in Cuba at the beginning of 2010. Currently, Cuba sends health care professionals to work and gain experience in various parts of Suriname, which helps to alleviate the impact of the scarcity of health care workers in certain areas of Suriname, notably the rural interior. The Cuban brigade also has specialists in Suriname working on ophthalmology.

Since French Guiana is an overseas department of France that borders Suriname to the east of the Marowijne River, France has shown significant interest in health in Suriname, mainly because of the trans-border movement of people seeking health care services. The French Development Agency, Agence Française de Développement (AFD) provided 16.1 million euros for 2009–2014 in order to facilitate strengthening health care services in Suriname and reduce the strain on the health care system in French Guiana. The majority of this donor aid is a concessional loan of 15 million Euros for purchasing medical equipment, rehabilitating health centers and aid posts in the interior and constructing a hospital in Albina and other health care facilities in the interior. The remaining 1.1 million euros is a grant to support inter-country exchanges and enhance cooperation. Currently the two governments are in discussions on a series of joint activities with PAHO/WHO involved in this process through the PWR Suriname and the Caribbean Program Coordination.

A joint commission signed in 2004 between the Indonesian and Surinamese governments highlights the close relationship between the countries and focuses on enhancing cooperation. The specific health areas of focus for the Indonesian government in Suriname include prevention and management of chronic diseases, provision of medical laboratory equipment, improving access to vaccines, providing health education and strengthening health care workforce capacity. The scale of this collaboration is modest.

Agencies linked to the Dutch Ministry of Foreign Affairs have been very active in Suriname and have been providing technical cooperation through twinning programs. These programs provide funding for projects that match experts from both Suriname and Netherlands. Twinning partially funds the Cardiovascular Risk Management Study, a study implementing multiple interventions for chronic disease prevention and management. Since 2010 no twinning projects have been initiated and many projects are winding down. There are also private initiatives that have developed partnerships with local groups and organizations that foster relationships for support across borders.

Three United States agencies represented in Suriname that are involved in the health sector are the Department of Defence, Peace Corps, and the Department of State. Activities include water and sanitation, HIV, mental health, and outreach to youth, specifically encouraging active responsibility among young men. US clinical missions provide health care, including eye care and dental health in Paramaribo and several districts.

Although in the past the European Union (EU) was involved in many areas in Suriname (disasters, sexual and reproductive health, and health effects of drug abuse), they are not currently directly involved in the health sector, apart from supporting monitoring progress towards meeting the MDGs and improving data analysis in this area. Current areas of focus include supporting the rice and banana industries to reach and maintain WTO requirements. Additionally, the EU is assisting the transportation sector with the road from Paramaribo to Albina.

Multilateral Agencies and Health

The Organization of American States (OAS), the Inter-American Institute for Cooperation on Agriculture (IICA) and the Inter-American Development Bank (IDB) are present in Suriname as PAHO partners of the Inter-America system.

The OAS has been actively monitoring democratic activities and was an observer during the 2010 election process.

IICA has significant expertise to provide technical cooperation for sustainable agricultural development, food security, and rural prosperity. IICA's current focus is supporting the implementation and monitoring of modern sanitary and phytosanitary measures to ensure compliance to international regulations and trade agreements. IICA provides science and research information, as well as implementation support regarding food safety and emerging issues (i.e. H1N1 and H1N5).

As one of the largest and long-established sources of development funding in Latin America and Caribbean countries, the strategic position of IDB enables their focus on sustainable, climate-friendly development to reduce poverty and inequality. The IDB has been present in Suriname since 1953, as the country was one of the founding members. The IDB has been very active in the health sector; during 2004, the IDB and the Government of Suriname signed a loan agreement for US$ 5 million to implement health sector reform. The focus of the loan was on strengthening infrastructure and human resources for health. These funds ended in 2010. Negotiations for a new loan are on-going, though it is uncertain if a new loan from IDB for primary health care is forthcoming. Currently discussions are taking place regarding a conditional cash transfer.

The Global Fund to fight AIDS, TB and malaria is an important partner for Suriname. Table 11 shows the five approved grants for Suriname.

Table 11: Approved Global Fund grants approved, Suriname, 2005 – 2012.

Grant type	Round	Grant title	Principal Recipient	Signed grant agreement (US$)	Grant phase	Grant duration
HIV/AIDS	3	Extending and improving the quality of life of Persons Living With HIV/AIDS	MOH	5,271,393	Phase II – In progress	01 Feb 2005 – 31 Jan 2012
Malaria	4	Decreasing the incidence of malaria in the populations of the interior of Suriname	Medical Mission	4,857,904	Phase II – In Closure	01 Feb 2005 – 31 Oct 2010
HIV/AIDS	5	Reducing the spread and impact of HIV/AIDS in Suriname through expansion of prevention and support programs	MOH	3,838,706	Phase II- In progress	01 Feb 2007 – 31 Jan 2012
Malaria	7	Looking for gold, finding malaria	MOH	2,375,500	Phase I – In progress	01 April 2009 – 31 March 2011
TB	9	Doing what it takes to stop tuberculosis in Suriname – DOTS Suriname Project	MOH	2,055,216	Phase 1 – In progress	01 Nov 2010 – 31 Oct 2012

***Source*:** Global Fund, 2011.

Regional Integration

In 1995, Suriname became the 14th member of CARICOM. This membership has increased the opportunities for development aid for Suriname and has broadened possibilities for exchanging expertise. Suriname participates in the CARICOM health meetings and frequently uses the Caribbean Cooperation in Health (CCH III) as a guiding framework.

The CARICOM Caribbean Agricultural Health and Food Safety Agency (CAHFSA), was established in 2010 to support the Caribbean countries to strengthen agricultural health and food safety, and to ensure the highest standards for trade in agricultural products. CAHFSA efforts focus on upgrading analytical capabilities in food, strengthening the Food Controls system in the areas of inspection (plant, meat, and fish) and testing to comply with the World Trade Organization (WTO) agreements. Unfortunately, in a fire later in 2010 the new LVV laboratory that was also going to serve as the CAHFSA lab was destroyed. The equipment was partially saved and plans for the construction of a new laboratory are being finalized.

CARPHA was conceived as a response to the weaknesses identified in various studies, which emphasized the need for a consolidated Caribbean public health system to address new health challenges. Though it is still in development, the role of CARPHA is expected to be wide ranging to advance the public health agenda in the region. Specifically, the main functions of CARPHA will be: health emergency preparedness and response; leadership in public health; information, education and communication; research, policy development and evaluation; laboratory services; surveillance and health analysis; human resources development and training; and strategic planning and resource mobilization. Also in 2010, the Secretary General of CARICOM and the Minister of Health of Trinidad with their staff visited the newly inaugurated laboratory of the Bureau of Public Health facilitated by PAHO/WHO, in the light of the development of the Caribbean Public Health Agency (CARPHA) in Trinidad and Tobago and the possibilities of Suriname's public health laboratory playing a regional role.

Suriname is also a member of the Union of South American Nations (UNASUR). UNASUR is an intergovernmental union integrating two existing customs unions: MERCOSUR and the Andean Community of Nations, as part of a continuing process of South American integration. The corresponding Health Council is UNASUR Health, which proposes to "consolidate South America" as an opportunity for integration in health that contributes to the health for all and to development, incorporating and integrating the efforts and sub-regional achievements of MERCOSUR, ORAS-CONHU, and ACTO. UNASUR Health has a strong leadership and governance position related to their ability to mobilize member countries. On 21 April 2009, member countries proposed an agenda that prioritizes five focal areas: surveillance and response; universal health systems; universal access to drugs, health promotion and action on the determinants of health; and human resources management. Suriname is actively participating in many UNASUR meetings, particularly in health.

Furthermore, Suriname is a member of the Amazon Cooperation Treaty (ACTO), a legal instrument that recognizes the trans-boundary nature of the Amazon. ACTO reaffirms the Amazon countries' sovereignty and encourages, institutionalizes and guides regional cooperation between them for the purposes of increased scientific and technological research, information exchange, natural resources use, preservation of cultural heritage, healthcare and other border-related issues.

In the area of health, since 2008 Suriname has been an active member of the Pan-Amazonian Network of Science, Technology & Innovation in Health (ST&IH), a joint project with FIOCRUZ, ACTO and PAHO, among other organizations. The fifth meeting of the ST&IH Pan Amazonian Network took place in Paramaribo in 2010 and currently the ST&IH Pan Amazonian Network presidency is held by Suriname. The Network's purpose is to facilitate an interface to exchange practical experiences in health, promote permanent capacity building and develop research and materials that will benefit the Amazonian community. Suriname participates in the environmental health project, which has been slow to start.

Development Banks and International Financial Institutions

Suriname's relationship with the IDB has already been discussed.

Suriname is a member of the Islamic Development Bank (IsDB), which has provided loans for many initiatives. Regarding health, the Bank has supported reinforcing health care facilities, particularly upgrading and building primary care centers in the rural interior and constructing a radio-therapeutic centre for the Academic Hospital of Paramaribo. Additionally, the IsDB has provided support for technical cooperation for a feasibility study on a water supply system in Wanica.

Both International Monetary Fund (IMF) and World Bank have had long-term relations with Suriname. The Country joined the IMF during 1980 and there have not been any transactions since January 1, 1984. The IMF continues to provide technical cooperation and expertise through economic missions. Similarly, the first World Bank economic mission during 1951 began the long relationship between the World Bank and Suriname. Currently the World Bank conducts economic consultations. Both international institutions offered support during the political instability of the 1990s, but the government refused assistance.

After the 2010 elections, discussions with the World Bank and the IsDB resumed.

Civil Society and Non-Governmental Organizations (NGOs)

The role of civil society is significant to the health sector. The main function of civil society is to implement and provide services and work with key populations of interest in various geographic locations all over the country. A detailed list of NGOs related to health currently operating in Suriname is included in Annex 7.2

Workers unions are present in Suriname. Apart from the traditional involvement in ILO, occupational safety and health and child labour the unions do not have a strong involvement in health-related issues.

Regional Health Institutes and WHO Collaborating Centers

Suriname is a member of CAREC, the PAHO/WHO Caribbean Epidemiology Centre, which provides support for activities related to disease surveillance and laboratory support. Also during the recent H1N1 pandemic important support was received from CAREC. Within this context a Real-Time PCR (Polymerase chain reaction) has been donated from CAREC to the new BOG Laboratory. The center also gave support for developing the STEPS (STEPwise approach to surveillance) risk factor survey and other NCD related activities.

Although Suriname is not a member of the Caribbean Food and Nutrition Institute (CFNI), technical cooperation is provided upon request. In 2004 a protocol for the nutritional management of obesity, diabetes and hypertension in the Caribbean was developed and in Suriname this protocol has been used to train diabetes and HIV/AIDS nurses. In 2010 CFNI assisted in developing a proposal for a national food consumption study, for which resources are being sought.

Suriname is considering membership in the Caribbean Environmental Health Institute (CEHI). Currently, technical support is provided upon request. In 2008 CEHI assisted Suriname with the Health-Care Waste Management Study for Suriname. This study provided a concise report on the present situation and proposed intervention for management and control of medical waste in Suriname.

Future collaborations are foreseen with the Latin American Centre for Perinatology and Human Development (CLAP) regarding safe motherhood.

Suriname has intermittent relations with WHO Collaborating Centers. Collaboration takes place with CDC, FIOCRUZ, and RIUM but not directly within the context of PAHO/WHO collaboration.

Academic Institutions

The Anton de Kom University (ADEK University), the only university in Suriname, trains medical doctors and physiotherapists in the Faculty of Medical Sciences. This faculty works closely with several universities in the Netherlands and the USA. Most hospitals have collaboration agreements with Dutch

institutions. Three years ago the Institute for Graduate Studies and Research (IGSR), an associated institute of the ADEK University, started a Master of Public Health program. The first 30 students are in their last phase of the course.

During 2010, the Medical Science Institute (MWI) also started a two-year Master of Public Health program in close collaboration with the Tulane University School of Public Health, New Orleans, USA. Eighteen students are enrolled. Quality Assurance and Accreditation are provided by Tulane University.

The Center for Training of Nurses and Associated Occupations (COVAB) is the largest training location for nurses in the country and is currently in a transition phase for implementation of the new curriculum for Nursing. Also, the COVAB is active with an accreditation procedure for its education. Three hospitals (AZP, St. Vincentius and SZN) provide in-service training for nurses. Until two years ago they had their own curriculum, but since 2009 they agreed to use the national (COVAB) curriculum.

COVAB has agreements with other training institutions such as Karel de Groot Hogeschool in Antwerp, Belgium and RCR Health Centre in Driebergen, Netherlands. The latter is a collaboration to exchange teachers and students to do six months internships in the Netherlands.

Other Public and Private Sector Partners

Other public and private sector partners, such as mining companies and large private and public businesses, are supportive of health sector initiatives, particularly when approached with succinct proposals for collaboration. They have always been responsive to PAHO/WHO requests and opportunities for a more structural collaboration. A specific example of this collaboration is the support received to coordinate the response during the 2006 and 2008 floods. During this emergency, partners were able to provide in-kind and monetary support, supplying and transporting materials and emergency personnel. There is an important potential for strengthening the public-private partnerships in Suriname.

3.3 Coordination and Aid Effectiveness in the Country

The Ministry of Planning (PLOS) was responsible for coordinating all the donor partners in Suriname during the years 2005-2010. Since the August 2010 election, the new government decommissioned PLOS, shifting the responsibility of coordinating donor partners, including the UN desk, to the Ministry of Foreign Affairs.

Presently, no formal mechanism coordinates and monitors aid flows in Suriname, which has led to some fragmentation and an overlap in initiatives, however the government is very keen to structure a mechanism. Among donor partners there have been attempts to share and coordinate activities. In particular, the EU has been involved in this and has compiled a partial list of donor partners, indicating their activities and corresponding aid amounts. The last meeting was held in July 2011 when the new director of the IDB called a donor meeting inviting PAHO/WHO, UNDP, The US, France, the Netherlands and the EU.

Regarding the coordination of civil society organizations, many attempts have been made to create platforms or umbrella NGOs to aid in coordination. A recent development regarding the formation of the NGO Network Council that aims to strengthen the capacity of NGOs seems promising. Accountability and internal governance standards are not always clearly established and mechanisms for policy coherence between the work of NGOs and government are weak.

Country counterparts and donor partners recognize PAHO/WHO Suriname as the principal partner in health, able to network and broker partnerships, provide information and assist in health matters. In the past, the Organization has been significantly involved in attempts to coordinate donor partner activities through a formal donor partner round table led by PAHO/WHO Suriname. Though meetings were held regularly, this activity had limited success.

Currently, the strategic positioning of PAHO/WHO Suriname enables the Organization to play a lead role in the coordination of donor partners, which will enable championing health in all policies. In 2011, the US Embassy and PAHO/WHO organized a health donor meeting. The MOH will be responsible for follow up to this meeting.

3.4 UN Reform Status and the CCA/UNDAF Process

In addition to the four resident agencies, PAHO/WHO, UNDP, UNFPA and UNICEF, there are eight non-resident agencies supporting Suriname's development efforts comprising the United Nations Country Team (UNCT): UN Economic Commission for Latin America and the Caribbean (ECLAC); Food and Agriculture Organization (FAO); International Labour Organization (ILO); Joint United Nations Program on HIV/AIDS (UNAIDS); Educational, Scientific and Cultural Organization (UNESCO); Entity for Gender Equality and the Empowerment of Women (UNWOMEN); UN Information Centres (UNIC) and World Food Program (WFP).

In line with the Paris Declaration on Aid Effectiveness and the need for effective levels of coordination and harmonization of development cooperation and on the specific demand from the government (PLOS) at the time, the UN in Suriname committed to be a Delivering-as-One Self-Starter in 2007.

The current UN Development Assistance Framework (UNDAF) (2007-2011) was the first to be part of the "Delivering as One" (DaO) process. The UNDAF is used as a mechanism to improve the planning, coordination, implementation and monitoring of UN-supported activities in Suriname. The implementation and evaluation mechanisms for the UNDAF are the Common Country Program Action Plan (CCPAP), Annual Work Plans (AWPs) and 5 theme groups (social data, health, HIV/AIDS, interior and the recently-formed gender theme group).

Since 2010, consultations regarding the 2012-2015 UNDAF are going on through a participatory process involving government representatives, UN staff, representatives from the donor community, the non-government sector/civil society and the private sector. Analytical work and training sessions were held for UN and government partners on key issues such as results-based management and the human rights-based approach. The decision on the scope of the new UNDAF and its implementation mechanisms is ongoing and the new UNDAF is to be finalized in late 2011. PAHO/WHO is playing a key role in developing the UNDAF.

Being the specialized UN agency for Health, PAHO/WHO is the entry point to the UN for the Ministry of Health. This requires significant coordination and PAHO/WHO has been active clarifying roles and responsibilities of the different UN agencies through a "health mapping" exercise. The results of this exercise revealed that all four resident agencies are in various degrees involved in health and there was significant overlap. Annex 7.3 depicts the results of this mapping exercise. Currently, most of the health activities of other agencies are coordinated with PAHO/WHO before they are finalized with national counterparts, but the process still requires improvements and needs to be continued.

The PWR is the Designated Official for the UN Security System and in the absence of the Resident Coordinator, is the acting coordinator of the UN Interagency Emergency and Response team.

3.5 Key Issues, Challenges and Opportunities

The challenges and opportunities presented throughout this section have indicated that PAHO/ WHO's direction for cooperation with partners over the next CCS cycle will include increased emphasis on cooperation and coordination. However, challenges persist in the need to incorporate health as a significant part of all agendas on the country level to build more effective and inclusive partnerships for development.

PAHO/WHO has an excellent reputation and due to many achievements and opportunities currently available, now is an appropriate time to focus on strengthening partnerships, coordination and aid

effectiveness particularly addressing the growing number of bilateral/multilateral partnerships, existing interagency agreements and current negotiations for new agreements (i.e. Pan American Alliance for Nutrition and IDB). Furthermore, there remains an opportunity for further engagement with collaborating centers, academic institutions, as well as civil society and public/private partners as well as with the more traditional partners. However, due to the downturn in the economic climate, challenges persist in the implementation of joint planning strategies that aim to strengthen coordination and aid effectiveness.

4. Review of WHO Cooperation over the Past Six Years, 2005-2011

4.1 Review of PAHO/WHO's Cooperation with Stakeholders

PAHO/WHO Suriname works closely with country counterparts and development partners using the Bi-Annual Work Plans (BWPs), which are linked to the PAHO Strategic Plan 2008 -2012 and the Health Agenda of the Americas, as the operational planning and performance measurement tool. Discussions with the Minister of Health, the Director of Health and other key informants represented external perceptions of PAHO/WHO's contribution to health development in Suriname. The external review highlighted three key themes: contribution to enhancing national capacity and ownership, broker for health and the areas of focus for the next CCS Cycle.

Consultations with national counterparts emphasized that PAHO/WHO Suriname occupies a facilitating role in health and actively contributes to enhancing national ownership. Particularly, through promoting inter-country learning and collaboration experiences, enhancing capacity-strengthening opportunities. Counterparts indicated that the technical cooperation provided by PAHO/WHO was strategic, relevant and timely. In particular, PAHO/WHO assists with coordination by being a health advocate and playing a convening role in interdisciplinary, intrasectoral and intersectoral dialogue.

Counterparts provided recommendations for areas of focus in the upcoming CCS cycle, emphasizing the importance of an integrated approach to NCDs and requesting that control of infectious disease remains a focus to protect past achievements and reach future ones. Of particular concern regarding infectious disease was continuing EPI, which has had significant success in Suriname. Other specific recommendations included health systems strengthening ie. health financing models, human resources, health information and research systems, and mitigating the health impact of disasters, emergencies and environmental health. Overall, country counterparts suggested that PAHO/WHO continue to focus on strengthening capacity (i.e. improving training initiatives in all areas), continue to facilitate South-South Collaboration and provide technical cooperation for strategic planning in all priority areas.

4.2 Internal Review

An internal review process carried out with PAHO/WHO Suriname staff during February 2011 analysed internal, operational elements that have had an impact on the Organization's performance in the country.

Human Resources

Currently, apart from the PWR, there is one International Staff Post in the Country Office (CO). Traditionally the international staff post was in the area of communicable diseases, but since mid-2010, this post changed to Health Systems and Services as this area was considered as the most important and neglected area of collaboration in the CO.

The issue of an adequate human resource mix for the CO is a constant challenge. Due to the lack of financial resources, the office relies on national consultants to work on the various areas of the BWP. Currently the technical staff encompasses one international staff post (Health systems), two National Officers (NO) covering Infectious Diseases and Disaster Preparedness and Response, while consultants cover the other areas. This configuration is not ideal and not sustainable and entails challenges for continuity of work. For the office to be successful in fully implementing the CCS, it would be desirable to have an NO for all the relevant areas including Chronic Diseases, Sexual and Reproductive Health, Immunization and Environmental Health/Social Determinants in addition to the existing NOs and International Post.

One of the secretaries is devoting half time to communication and public relation activities. Annex 7.5 provides a snapshot of the organization and structure of PAHO/WHO Suriname.

Financial Resources

The 2006-2007 biennium marked the application of the Regional Program Budget Policy (RPBP). The phased reductions resulted in a 26% decrease from its introduction in the regular budget over three

biennia. Table 12 shows the financial resources available to PAHO/WHO Suriname. Mainly, the regular budget is the source of funds for the management and coordination of the office (e.g. operating expenses, salaries, and IT). The other sources include voluntary contributions (PAHO, WHO, and donor contributions).

Table 12: Financial Resources Available to Suriname through the PAHO/WHO Country Office 2004 – 2011.*

Funding Source	Biennium 2004-05	Biennium 2006-07	Biennium 2008-09	Biennium 2010-11	Biennium 2012-13
Regular Budget	1,377,400	1,270,000	1,222,952	1,017,300	480,000
Other Sources	618,293	873,476	1,020,055	644,101	296,387
Total	**1,995,693**	**2,143,476**	**2,243,007**	**1,661,401**	**776,387**

*Note: Allocation is in USD

Installed Capacity: Office infrastructure and Equipment

During August 2001, the decision was made to relocate the PAHO/WHO CO due to the deteriorating condition of the building and an office space was rented. In October 2010, PAHO/WHO Suriname relocated again to a building belonging to and next to the head offices of MOH, situated in the historic inner City of Paramaribo, a UNESCO World Heritage Center. The Ministry of Health and PAHO both coordinated and funded the renovation of this building, enabling PAHO/WHO to rent the office for a symbolic rental amount. This reduction in rental cost is a welcome cost-saving measure that has freed operation funds for technical cooperation. Additionally, MOH currently provides three drivers and one administrative staff for support and pays the electricity bill of the office.

Regarding the physical infrastructure of the new office, PAHO/WHO Suriname meets MOSS requirements. The IT infrastructure will require upgrading during this year as computers and printers were last upgraded during 2007 and require upgrading every 3-4 years. The PBX telephone system will need to be upgraded to have VOIP capabilities to keep in line with PAHO/WHO office standards.

PAHO/WHO Suriname is aware of the significance of reducing the office's carbon footprint. Steps taken to reduce the negative environmental impact include: duplex printing, recycling PET bottles, and an office-wide electronic filing system. Additionally, staff minimize the use of lights and air conditioning whenever possible.

4.3 Synthesis of Key Findings

The technical cooperation focus over the past two biennia has been on the burden of communicable diseases (SO1 and SO2) with 34% of the projects, followed by NCDs (SO3), health promotion in the different age groups (SO4) and prevention of risk factors (SO6) representing 10% of PAHO/WHO's technical cooperation efforts in the country. In contrast, the strategic objectives associated with nutrition for sustainable development (SO9), medical products and technologies (SO12) and human resources for health (SO13) were under represented. The relative over- and under-representation of certain areas was a reflection of the human resource capacity available at the time which has since been addressed with a shift in 2010, from an international consultant in the area of infectious diseases to health systems and services, as can be observed in the increase of focus in SOs related to health systems and services (SO10 to SO14) over the last year (Annex 7.6 shows the degree of focus for Technical Cooperation in Suriname for the periods 2008-2011 and 2012-2016). This picture is in line with the actual budget

allocation over the last biennia. (Annex 7.7 shows the exercise that maps 2010-2011 CCS to PAHO/WHO Core Function).

Since 2010, during regular staff meetings the team discusses the implementation of the BWP, joint activities, key successes, and areas requiring strengthening. Table 13 summarizes the strengths, weakness, opportunities and threats identified through the internal PAHO/WHO CO review.

Table 13: Internal SWOT Analysis of PAHO/WHO Suriname, 2011.

Strengths	Weaknesses
▪ Expertise, knowledge, and dedicated team ▪ Keeping a broader scope of health and its determinants ▪ Acknowledged as a strong partner ▪ Negotiator facilitating relevant partnerships ▪ Availability of critical expertise in PAHO/WHO ▪ Excellent relationship with partners and donors	▪ Limited human and financial resources ▪ Internal communication between different levels of PAHO/WHO not optimal ▪ Continuing to strengthen teamwork ▪ Incipient inter-programmatic, horizontal approach, and cross-cutting work
Opportunities	**Threats**
▪ Lead role in cooperation mechanisms with other UN agencies ▪ Access to strategic (donor) partners ▪ Counterparts and partners are motivated ▪ Potential to expand and strengthen partnerships ▪ Request for Tech Cooperation on HSP development ▪ Start of new UNDAF cycle ▪ Increasing awareness of Paris Declaration ▪ Evolving leadership and governance role of country counterparts, including regional networks	▪ Challenges posed by greater external pressures (e.g. economic crises) ▪ Reduced access to low cost external funding due to middle income country status ▪ Multiple actors in health with competing and overlapping agendas holding more financial resources ▪ Limited development partner coordination ▪ Multiple, intermittent demands on technical officers and country counterparts ▪ Loss of continuity with employees due to PAHO/WHO administrative requirements (corporate contractual mechanisms)

5. The Strategic Agenda for PAHO/WHO Cooperation

5.1 Conducting the Prioritization Exercise to Define the Strategic Agenda

A collaborative approach was used to review the multiple sources of information gathered and to engage in a prioritization exercise to define the strategic agenda. Country counterparts, donor partners, and other partners were involved. The following criteria were considered during the process:

- PAHO/WHOs Mandate/Resolutions;
- Added value;
- Available resources;
- National commitment;
- Actions of main development partners.

5.2 Defining the Strategic Agenda

The centerpiece of the CCS 2012-2016 is the introduction of renewal of primary health care (PHC) as the most sustainable and equity-enhancing model of health care and its introductory locus will be the under-served populations of the rural interior where the greatest deviations from national health averages reside. By addressing the primary and secondary prevention of communicable and non-communicable diseases, PHC will also focus on the main constituents of Suriname's epidemiological transition and, by attracting more patients to first-line facilities, serve to improve the efficiency of secondary level care (vertical coordination) by improved linkages between primary care and other sectors to enhance preventive action by enhancing the determinants of health at all levels.

The principal challenge faced by PAHO/WHO is how to provide effective partnership and technical assistance to the MOH in the context of a dynamically reforming national health care system that is now addressing long-neglected, critical issues. Table 14 presents the strategic agenda by Strategic Priorities and corresponding Main Focus areas and Strategic Approaches.

Strategic Priority 1: Reducing the Burden of Disease

Main Focus Areas:

- Reducing the burden of NCDs
- Strengthening community-based mental health
- Reducing the communicable disease burden
- Enhancing family health over the life course
- Reducing violence and injuries

Strategic Priority 2: Strengthening health systems and services based on primary health care approach

Main Focus Areas:

- Strengthening health planning
- Strengthening health services
- Optimizing health financing
- Enhancing human resources for health
- Increasing the production and use of strategic health information

Strategic Priority 3: Addressing the determinants of health

Main Focus Areas:

- Strengthening national response to environmental health threats
- Strengthening capacity and coordination to address workers' health
- Improving the management of emergencies and disasters
- Advancing on social determinants of health

Table 14: Suriname Country Cooperation Strategy Strategic Agenda, 2012 – 2016.

1. Strategic Priority: Reducing the burden of disease			
1.1. Main Focus Area: Reducing the burden of NCDs			
1.1.1. Technical cooperation and leadership to develop and implement evidence-informed policies and plans on priority NCDs	1.1.2. Technical cooperation to adopt or adapt norms and standards for integrated management of NCDs	1.1.3. Leadership and partnerships to promote healthy lifestyles and enabling environments, including FCTC implementation and monitoring	1.1.4. Technical cooperation to develop an integrated system for the surveillance of risk factors and NCDs, linking to the national health information system
1.2. Main Focus Area: Strengthening community-based mental health			
1.2.1. Technical cooperation to integrate mental health into Primary Health Care, based on the WHO AIMS recommendations		1.2.2. Technical cooperation and leadership to strengthen the framework for mental health and monitor progress	
1.3. Main Focus Area: Reducing the communicable disease burden			
1.3.1. Technical cooperation, leadership, and policy options to develop, update, and implement evidence-informed frameworks, norms, and standards for priority infectious diseases, with emphasis on MTCT and NTDs, and facilitate their integration into the health system	1.3.2. Leadership and partnerships to prevent and control priority infectious diseases	1.3.3. Technical cooperation to implement an integrated surveillance system, which incorporates epidemic alert and response to emerging and re-emerging diseases	
1.4. Main Focus Area: Enhancing family health over the life course			
1.4.1. Technical cooperation to develop and update existing national comprehensive, evidence-informed frameworks that promote universal access to a continuum of care	1.4.2. Leadership and partnerships to strengthen capacity to address family health over the life course	1.4.3. Technical cooperation and facilitation of inter-country exchange to share experiences to develop, improve and standardize norms and protocols, and monitor their implementation	1.4.4. Technical cooperation to strengthen capacity to improve information and surveillance systems and implement proven interventions that address identified gaps, with emphasis on maternal and infant mortality
1.5. Main Focus Area: Reducing violence and injuries			
1.5.1. Technical cooperation, partnerships, and inter-country exchange for the development and implementation of evidence-based frameworks		1.5.2. Technical cooperation and leadership to strengthen human and institutional capacities to address violence and injuries based on existing PAHO/WHO frameworks	

2. Strategic Priority: Strengthening health systems and services based on primary health care		
2.1. Main Focus Area: Strengthening health planning		
2.1.1. Leadership, policy options, and technical cooperation for the development, implementation, monitoring, and evaluation of a comprehensive National Health Sector Agenda	2.1.2. Technical cooperation for policy options and mechanisms to strengthen national policy dialogue	
2.2. Main Focus Area: Strengthening health services		
2.2.1. Policy options and inter-country exchanges for the renewal of Primary Health Care to increase coverage of underserved populations	2.2.2. Technical cooperation, norms, and standards for quality improvement of the health services and use of innovative technologies for health	
2.3. Main Focus Area: Optimizing health financing		
2.3.1. Technical cooperation, policy options and partnerships for improving the funding of the health sector	2.3.2. Technical cooperation, policy options for the establishment of a mechanism for health financing that will increase coverage, reduce inequalities, promote efficiency, and protect against financial risk	
2.4. Main Focus Area: Enhancing human resources for health		
2.4.1. Technical cooperation, policy options for the optimal mix, number, and distribution of HRH related to current and projected needs	2.4.2. Technical cooperation to improve the competencies and institutional environment for greater efficiency and effectiveness of HRH	
2.5. Main Focus Area: Increasing the strategic production and use of health information		
2.5.1. Technical cooperation and South-South collaboration for the establishment of an integrated and standardized health information system, with data that are disaggregated by sex, age, ethnicity, and other key variables, and analyzed with a social determinant perspective	2.5.2. Leadership on the packaging and dissemination of health and health-related information for different audiences	2.5.3. Leadership on the strategic use of health information

3. Strategic Priority: Addressing the determinants of health		
3.1. Main Focus Area: Strengthening national response to environmental health threats		
3.1.1. Technical cooperation and partnerships in developing, reforming, and updating frameworks, norms, and standards to address priority environmental health risks	3.1.2. Generation, translation, and dissemination of valuable and relevant knowledge on priority environmental health issues	3.1.3. Technical cooperation and leadership to strengthen coordination among sectors and stakeholders involved in environmental health
3.2. Main Focus Area: Strengthening capacity and coordination to address workers' health		
3.2.1. Technical cooperation to develop a framework to address workers' health	3.2.2. Technical cooperation and leadership to strengthen coordination among sectors and stakeholders regarding workers' health	3.2.3. Technical cooperation and leadership to strengthen human and institutional capacity to address workers' health
3.3. Main Focus Area: Improving the management of emergencies and disasters		
3.3.1. Technical cooperation for the implementation and the monitoring of the Safe Hospital initiative	3.3.2. Coordination and technical cooperation for institutional strengthening for risk reduction, response to emergencies and disasters, and addressing the health impact of climate change	
3.4. Main Focus Area: Advancing on social determinants of health		
3.4.1. Leadership to review and monitor the implementation of international agreements on human rights and health, and the MDGs	3.4.2. Technical coordination and leadership to increase the understanding of decision- and opinion-makers on the influence of social determinants of health (gender, poverty, ethnicity, geography, etc.)	3.4.3. Research and partnerships with research institutions to analyze the national context of the social determinants of health (concepts of health)

5.3 Validation of the CCS Strategic Agenda with National Health Sector Priorities

The validation process of the Suriname CCS strategic agenda with the National Health Sector Priorities occurred continually in the development of the CCS. The concurrent dialogue regarding National Health Sector priorities was significant as it ensured the use of country mechanisms. Particularly, the national health priority setting developed from inclusive dialogues ensured the alignment of priorities between national counterparts and PAHO/WHO.

A consultation exercise was conducted with the Minister of Health and the Director of Health to review the alignment of the further draft of the strategic agenda. Table 15 shows the results of this exercise, highlighting the strong alignment of the CCS Strategic Priorities with the National Health Sector priorities.

Table 15: Alignment of CCS Strategic Agenda with National Health Sector Priorities, Suriname 2011 – 2015.

CCS Strategic Priorities 2012-2016		National Health Sector Priorities
1.	Reducing the burden of disease: – Reducing the burden of NCDs – Strengthening community-based mental health – Reducing the infectious disease burden – Enhancing family health over the life course – Reducing violence and injuries	Reducing the disease burden: – NCDs – Mental Health and Substance Abuse – Infectious disease – Family Health over the Life Course
2.	Strengthening health systems and services based on primary health care: – Strengthening health planning – Strengthening health services – Optimizing health financing – Enhancing human resources for health – Increasing the strategic production and use of health information	Strengthen and enhance health system and services: – Stewardship and Governance – Health Service Delivery (including infrastructure) – Financing of health care reform – Health workforce – Health information systems – Medical products, vaccines and technologies
3.	Addressing the determinants of health: – Strengthening national response to environmental health threats – Strengthening capacity and coordination to address workers' health – Improving the management of emergencies and disasters – Advancing on social determinants of health	Social and Environmental Determinants, Health Security: – Social Determinants – Environmental & Occupational Health – Emergencies and Disaster Control – Violence and Injuries

5.4 Validation of the CCS Strategic Agenda with UNDAF Outcomes

Presently, the UN Agencies are in discussion regarding the preparation of the UNDAF. Since the timing of the development of the CCS was carefully considered, the CCS will contribute significantly to the UNDAF, informing the health component and furthering other social determinants that will be addressed in the document.

6. Implementing the Strategic Agenda: Implications for the entire Secretariat

6.1 The role and presence of WHO according to the Strategic Agenda

Suriname is considered a middle-income country with an active presence of development partners. The double burden of disease (NCDs and CDs) requires that the presence of the CO be of a strategic nature, facilitating access to the Organization's resources globally, regionally and sub-regionally, as well as provide the opportunity to contribute to and participate in the regional and global health agenda.

The implementation of this strategic agenda has specific implications on PAHO/WHO's role in the country. Based on the strategic priorities identified and the main areas of focus, this section sets out the support that will be required from the entire Secretariat in order to deliver on the commitments for technical cooperation as embodied in the 2012-2016 CCS.

PAHO/WHO's Role

The strategic agenda accentuates the essential role of PAHO/WHO as a principal development partner in health, shaping the agenda regionally within the UN System and the Inter-American Systems. At the global level WHO is recognized as the leader in the UN System shaping the global health agenda. This has significant implications for the entire Secretariat. PAHO/WHO's added value specifically defines the Organization as a catalyst for advancing the health agenda, providing technical cooperation for upstream policy levels to direct operational support in exceptional circumstances.

The implementation of the strategic agenda requires the continuation of PAHO/WHO's role as a trusted broker, which will enable the facilitation of partners' contributions towards national health policies, strategies and plans.

Country Office Suriname

The CO plays a strategic part within the Secretariat by assisting the country to address regional and global health mandates, which unfold in three health components: completing the unfinished agenda, protecting attained achievements and tackling new challenges. In addition, the CO plays a key part within the UN as a leader shaping the health agenda in the country.

The CO will play a fundamental role in providing guidance and support, and will continue to operate as an essential health development partner to implement the strategic agenda through:

- Advising the Government of Suriname strategically to advance the national health agenda;
- Occupying a strategic leadership role in key functional areas of health (advocacy, partnership and representation, policy development and technical cooperation, and administration and management)
- Responding intelligently to requests for technical cooperation from the Government of Suriname;
- Supporting the National Authorities for better alignment with internationally agreed resolutions;
- Recognizing the needs of the country, providing effective and appropriate technical cooperation to strengthen country-counterparts and in collaborating with other development partners;
- Building alliances and partnerships to extend the reach of technical cooperation;
- Furthering national participation in regional partnerships (i.e. ACTO, UNASUR, and CARICOM);
- Facilitating inter-country exchanges to identify, share and transfer best-practices and experiences through TCCs and other mechanisms with emphasis in the Guyana shield and the Amazonian countries;
- Promoting Suriname's participation in regional and global events to highlight progress and identify needs, as well as emphasize achievements;
- Identifying and mobilizing additional financial and human resources;

- Observing WHO guidelines for working with CO, to ensure enhanced collaboration and synergies between the CO and all levels of the Organization.

Sub-regional Level in the Caribbean

The sub-regional offices and programs in the Caribbean will aid the CO with the implementation of the strategic agenda; including supporting the follow-up with sub-regional guidelines from the various Caribbean and South American sub-regional integration entities.

Of particular importance is the Office of Caribbean Program Coordination (OCPC), whose focus is developing and implementing the Caribbean sub-regional technical cooperation program, responding mainly to the CARICOM Health Agenda – the Caribbean Cooperation in Health (CCH) Initiative.

The sub-regional offices, programs and agreements will promote technical cooperation in the main CCS areas of focus, specifically:

- Supporting resource mobilization and identification of additional resources;
- OCPC for PAHO/WHO program for emergencies and disasters and program support to align with the CHC-3 including NCDs, violence and injuries and Health system strengthening with particular emphasis on HRH, HIS, and pharmaceuticals;
- PAHO HIV Caribbean Office (PHCO) for technical cooperation to address HIV;
- The Caribbean Epidemiology Centre (CAREC) for technical cooperation for communicable disease prevention, surveillance and response;
- Sub-regional advice on laboratory strengthening;
- NCDs and chronic disease epidemiology, including mental health;
- Sub-regional PAHO/WHO EPI technical cooperation based at CAREC;
- Pan Amazonian Network of Science Technology and Innovation for Health (ST&IH Pan), to stimulate health communication and information in order to contribute for the betterment of the health and live conditions of the Amazonian population; currently the presidency of ST&IH Pan is held by Suriname.

PAHO/WHO Regional Level

PAHO/WHO will assist the CO to implement the strategic agenda, including support to cooperate technically, encourage collaboration, build capacity to establish health public policies, to identify, address, and monitor the social determinants of health, and to contribute to the development of a health promotion and public health culture.

Further, the implementation of the strategic agenda will require continued direct technical and financial support, as well as guidance from PAHO/WHO Headquarters through:

- Strategically placing health high on the public agenda of the Americas and globally;
- Ensuring the incorporation and application of health promotion and protection strategies at all levels of the Organization;
- Supporting networks to promote a broader understanding of health and expand the vision and strengthen good practices;
- Providing guidance to facilitate effective implementation of the UN cluster approach to humanitarian aid at the country level;
- Facilitating resource mobilization and identification of additional resources;
- Recognizing the country's needs and situations, making adjustments to procedures as appropriate, so that the country's focus is made explicit;
- Building capacity to establish healthy public policies, create healthy spaces, and improve the social determinants of health through social participation, empowerment of individuals and communities and the reorientation of health services;

- Providing technical coordination and expertise in main focus areas including the determinants of health, environmental health, health equity, food safety and security (Five Keys to Safer Food initiative), violence and injuries (TEACH-VIP web-based training), health information systems (Health Metrics Network), NTDs, HIV/STI/TB programs, crosscutting health equity themes (e.g., gender, cultural diversity human rights), and workers' health.

WHO Global Level

The implementation of the strategic agenda will require WHO to continue to occupy a leadership role as a global public health authority. The Organization is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, and monitoring and assessing health trends. WHO's role in supporting the implementation of this strategic agenda will include providing technical and financial support for the main areas of focus, including:

- Catalyzing change and providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
- Reinforcing the coordination between all levels of the Secretariat, enhancing interaction and complementary nature;
- Strengthening knowledge exchanges through networks of collaborating centers as a source of cutting-edge expertise and advice in specialized areas (i.e. furthering elimination efforts, advancing Workers' health, and strengthening Human Resources for health);
- Providing guidance and orientation for technical and policy activities to align to essential public health standards and best practices;
- Supporting resource mobilization and identification of additional resources;
- Sourcing of WHO voluntary contribution and other resources to be mobilized for country priorities;
- Providing expertise in crosscutting health equity themes (e.g. gender, cultural diversity, human rights, and other social determinants of health);
- Promoting Suriname in regional and global forums;
- Providing technical support of policy and legislation related to the implementation of the Framework Convention on Tobacco Control;
- Stimulating the generation, translation and dissemination of valuable knowledge;
- Setting norms and standards and promoting and monitoring their implementation;
- Articulating ethical and evidence-based policy options;
- Providing technical support and building sustainable institutional capacity;
- Supporting implementation of the new WHO Child Growth Standards;
- Providing technical cooperation in developing and implementing evidence-based frameworks, and leadership to strengthen human and institutional capacities for violence and injuries prevention;
- Providing technical expertise to analyse health financing mechanisms to develop policy options and strategies to enhance effectiveness to achieve universal coverage and social health protection.

6.2 Country Presence

The convening role of PAHO/WHO will reinforce the public health leadership position currently held by the Organization; this requires an effective, appropriate international public health response to make health outcomes more equitable.

The CO will have to strengthen coordination and interaction with other levels of the Organization in order to implement the CCS. The success of the CCS is therefore based on the appropriate mobilization of technical and financial resources at all levels of the Secretariat.

Further, the implementation of the strategic agenda will require reinforcing measures to accentuate the complementary nature between all levels of the Organization (sub-regional, regional and global). This will require creativity and initiative to develop new strategies to provide Suriname with the necessary technical expertise, including innovative ways to coordinate with all other levels of the Organization.

The declining financial flow to Suriname and the CO reinforces that the technical expertise provided by staff in country is essential. Human capital is the main strength of PAHO/WHO Suriname. The pool of national experts is minimal; therefore it is essential to foster current national experts by providing positive and rewarding opportunities. The current technical staff demonstrates substantial technical competencies in addition to soft skills, such as diplomacy, negotiation, brokering and partnerships.

Staff remains enthusiastic and dedicated to their work, though they are confronted with an increasing workload. An additional concern for staff is the pending employee contract mechanism that mandates a contractual break for consultants; this will fragment the continuity of staff and threatens to interrupt the implementation of the strategic agenda.

To be able to fully implement this strategic agenda and be responsive to country counterparts requires full support from the three levels of the Organization to reinforce the strength within the CO.

6.3 Monitoring and Evaluation of the CCS

The CCS is a crucial document that articulates the direction of PAHO/WHO in Suriname. Considering this importance, it is essential to monitor and evaluate the CCS to ensure continuing complementarity with partners. The implementation of the CCS Strategic Agenda will be monitored through the following mechanisms:

- Validation of the Secretariat's work plans against the CCS Strategic Priorities to ensure consistency;
- The consistency between the core capacity of the country office and the priorities identified in the Strategic Agenda.

The monitoring process will include a qualitative mid-term review that will be conducted during the second half of the CCS cycle. This mid-term review will assess the degree of implementation of the Strategic agenda, WHO's contribution to the NHPSP, and the engagement of the UNCT and other partners. This review will be used as key input for the development of the next CCS.

To facilitate the progress and final reviews of the CCS cycle, each Main Focus Area is linked to 'Outcome Indicators'. Table 16 displays the indicators for each Strategic Approach.

Table 16: Indicators for Monitoring and Evaluation, Suriname, 2012 -2016.

1. Strategic Priority: Reducing the Burden of Disease			
1.1. Main Focus Area: Reducing the burden of NCDs			
1.1.1. Technical cooperation and leadership to develop and implement evidence-informed policies and plans on priority NCDs	1.1.2. Technical cooperation to adopt or adapt norms and standards for integrated management of NCDs	1.1.3. Leadership and partnerships to promote healthy lifestyles and enabling environments, including FCTC implementation and monitoring	1.1.4. Technical cooperation to develop an integrated system for the surveillance of risk factors and NCDs, linking to the national health information system
Indicators			
▪ Policies and plans regarding priority NCDs established ▪ Integrated management and care for NCDs in Primary Health Care established ▪ Health promotion activities completed to promote healthy lifestyles and enabling environments for women and men/girls and boys sustained ▪ An integrated NCD risk factor surveillance system that is disaggregated by gender, ethnicity, place, age, income and other social dimensions developed and sustained			
1.2. Main Focus Area: Strengthening community-based mental health			
1.2.1. Technical cooperation to integrate mental health into Primary Health Care, based on the WHO AIMS recommendations	1.2.2. Technical cooperation and leadership to strengthen the framework for mental health and monitor progress		
Indicators			
▪ Integrated management and care of mental health in Primary Health Care established			
1.3. Main Focus Area: Reducing the communicable disease burden			
1.3.1. Technical cooperation, leadership, and policy options to develop, update, and implement evidence-informed frameworks, norms, and standards for priority infectious diseases, with emphasis on MTCT and NTDs, and facilitate their integration into the health system	1.3.2. Leadership and partnerships to prevent and control priority infectious diseases	1.3.3. Technical cooperation to implement an integrated surveillance system, which incorporates epidemic alert and response to emerging and re-emerging diseases	
Indicators			
▪ Framework for integrated management and care of communicable diseases in primary health care established ▪ Integrated surveillance system incorporating epidemic alert and response to emerging and re-emerging diseases that is disaggregated by gender, ethnicity, place, age, income and other social dimensions developed and sustained			

1. Strategic Priority: Reducing the Burden of Disease			
1.4. **Main Focus Area:** Enhancing family health over the life course			
1.4.1. Technical cooperation to develop and update existing national comprehensive, evidence-informed frameworks that promote universal access to a continuum of care	1.4.2. Leadership and partnerships to strengthen capacity to address family health over the life course	1.4.3. Technical cooperation and facilitation of inter-country exchange to share experiences to develop, improve and standardize norms and protocols, and monitor their implementation	1.4.4. Technical cooperation to strengthen capacity to improve information and surveillance systems and implement proven interventions that address identified gaps, with emphasis on maternal and infant mortality
Indicators			
▪ Comprehensive, evidence-informed frameworks that promote universal access to a continuum of care established ▪ Training initiatives for family health over the life course, including technical capacity and awareness for standardized norms and protocols sustained ▪ Information and surveillance systems that provide information on gaps, with emphasis on maternal and infant mortality that is disaggregated by gender, ethnicity, place, age, income and other social dimensions developed and sustained			
1.5. **Main Focus Area:** Reducing violence and injuries			
1.5.1. Technical cooperation, partnerships, and inter-country exchange for the development and implementation of evidence-based frameworks	1.5.2. Technical cooperation and leadership to strengthen human and institutional capacities to address violence and injuries based on existing PAHO/WHO frameworks		
Indicators			
▪ Comprehensive, evidence-informed frameworks developed and implemented to reduce violence and injuries established ▪ Training activities for violence, injuries and gender based violence, including technical capacity and awareness sustained			
2. Strategic Priority: Strengthening health systems and services based on primary health care			
2.1. **Main Focus Area:** Strengthening health planning			
Leadership, policy options, and technical cooperation for the development, implementation, monitoring, and evaluation of a set of comprehensive National Health Sector priorities	Technical cooperation for policy options and mechanisms to strengthen national policy dialogue		
Indicators			
▪ Comprehensive national health priorities established ▪ Mechanism for national policy dialogue established			

2. Strategic Priority: Strengthening health systems and services based on primary health care		
2.2. **Main Focus Area:** Strengthening health services		
2.2.1. Policy options for the renewal of Primary Health Care to increase coverage of underserved populations	2.2.2. Technical cooperation for inter-country exchanges to share experiences and adopt existing models to Surinamese context	2.2.3. Technical cooperation, norms, and standards for quality improvement of the health services and use of innovative technologies for health
Indicators		
▪ Primary Heath Care framework that includes quality improvement and use of innovative technologies for health established		
2.3. **Main Focus Area:** Optimizing health financing		
2.3.1. Technical cooperation for, policy options and partnerships for improving the funding of the health sector	2.3.2. Technical cooperation, policy options for the establishment of a mechanism for health financing that will increase coverage, reduce inequalities, promote efficiency, and protect against financial risk	
Indicators		
▪ Health financing policy that emphases increase coverage, reduce inequalities, promote efficiency, protect against financial risk, and improve the overall funding of the health sector established		
2.4. **Main Focus Area:** Enhancing human resources for health		
2.4.1. Technical cooperation, policy options for the optimal mix, number, and distribution of human resources for health related to current and projected needs	2.4.2. Technical cooperation to improve the competencies and institutional environment for greater efficiency and effectiveness of human resources for health	
Indicators		
▪ Human resources for health policy that emphasize optimal mix, number, and distribution of human resources for health established ▪ Training activities for human resources for health, focusing on technical capacity and awareness sustained		
2.5. **Main Focus Area:** Increasing the strategic production and use of health information		
2.5.1. Technical cooperation and South-South collaboration for the establishment of an integrated and standardized health information system, with data that are disaggregated by gender, age, ethnicity, and other key variables, and analyzed with a social determinant perspective	2.5.2. Technical cooperation to strengthen the capacity for the packaging and dissemination of health and health-related information for different audiences	2.5.3. Technical cooperation and leadership to strengthen the capacity for the strategic use of health information
Indicators		

2. Strategic Priority: Strengthening health systems and services based on primary health care
▪ Integrated and standardized health information system established and sustained, ▪ Training sessions held for the packaging and dissemination of information and the strategic use of health information with a focus on technical capacity and awareness sustained ▪ Norms and standards for data producers and users established ▪ Key research, surveillance reports, and finalized data sets produced ▪ Key research, surveillance reports, and finalized data sets key decision makers and institutions disseminated

3. **Strategic Priority: Addressing the determinants of health**		
3.1. **Main Focus Area:** Strengthening national response to environmental health threats		
3.1.1. Technical cooperation and partnerships in developing, reforming, and updating frameworks, norms, and standards to address priority environmental health risks	3.1.2. Technical cooperation and leadership for the generation, translation, and dissemination of valuable and relevant knowledge on priority environmental health issues	3.1.3. Leadership and partnership to strengthen coordination among sectors and stakeholders involved in environmental health
Indicators		
▪ Frameworks, norms, and standards for priority environmental health risks established ▪ Research, surveillance reports, and finalized data sets on priority environmental health issues produced ▪ Research, surveillance reports, and finalized data sets to key decision makers and institutions disseminated ▪ Coordination mechanism among sectors and stakeholders regarding environmental health established ▪ Training initiatives held among sectors and stakeholders involved in environmental health sustained		
3.2. **Main Focus Area:** Strengthening capacity and coordination to address workers' health		
3.2.1. Technical cooperation to develop a framework to address workers' health	3.2.2. Technical cooperation and leadership to strengthen coordination among sectors and stakeholders regarding workers' health	3.2.3. Technical cooperation and leadership to strengthen human and institutional capacity to address workers' health
Indicators		
▪ Framework workers' health established ▪ Established coordination mechanism among sectors and stakeholders regarding workers' health ▪ Sustained training initiatives held regarding workers' health		
3.3. **Main Focus Area:** Improving the management of emergencies and disasters		
3.3.1. Technical cooperation for the implementation and the monitoring of the Safe Hospital initiative	3.3.2. Technical cooperation for institutional strengthening for risk reduction, response, and mitigation to emergencies and disasters, including the impact of climate change on health	
Indicators		
▪ Monitoring of the Safe Hospital initiative developed and sustained ▪ Coordination mechanisms for risk reduction, response to emergencies and disasters, and addressing the health impact of climate change established ▪ Institutional strengthening initiatives sustained		
3.4. **Main Focus Area:** Advancing on social determinants of health		
3.4.1. Leadership to review and monitor the implementation of international agreements on human rights and health, and the MDGs	3.4.2. Technical coordination and leadership to increase the understanding of decision- and opinion-makers on the influence of social determinants of health (gender, poverty, ethnicity, geography, etc.)	3.4.3. Research and partnerships with research institutions to analyze the national context of the social determinants of health (concepts of health)
Indicators		

- Implementation of international agreements on human rights and health, and the MDGs monitored
- Training initiatives regarding decision- and opinion-makers on the influence of social determinants of health sustained (gender, poverty, ethnicity, place, etc)
- Partnerships for PAHO/WHO sustained
- Research, data, analysis, reports disseminated data and information on the impact of the social determinants of health (concepts of health) disseminated

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ANNEXES

Annex 1. List Of Acronyms

ABS	General Bureau of Statistics
ACT	Amazon Conservation Team
ACTO	Amazon Cooperation Treaty Organization
ADEK	Anton de Kom University
AIDS	Acquired immunodeficiency Syndrome
APIs	Active Pharmaceutical Ingredients
ARV	Anti-Retroviral medication
AZP	Academic Hospital
BAD	Bureau of Alcohol and Drugs
BFN	Bureau Forum NGOs
BGVS	Drug Supply Company Suriname
BOG	Bureau of Public Health
BWP	Biennial Work Plans
CAHFSA	Caribbean Agricultural Health and Food Safety Agency
CARPHA	Caribbean Public Health Agency (CARICOM)
CAREC	Caribbean Epidemiology Center
CARICOM	Caribbean Community
CCB	Central Bureau of Civil Affairs
CCA-UNDAF	Common Country Assessment UN Development Assistance Framework
CCH-3	Caribbean Cooperation in Health-3
CCPAP	Common Country Program Action Plan
CCS	Country Cooperation Strategy
CCS	Country Cooperation Strategy
CD	Communicable Diseases
CDERA	Caribbean Disaster Emergency Response Agency
CFNI	Caribbean Food and Nutrition Institute
CLAP	Latin American Centre for Perinatology and Human Development
CNCD	Chronic Non-Communicable Diseases
CO	Country Office
COVAB	Central Training for Nurses and Related Occupations
CSME	CARICOM Single Market and Economy
CT&IS Pan	Pan Amazonian Network of Science technology and Innovation for Health
DMFT	Decayed, Missing and Filled Teeth
DOTS	Directly Observed Treatment Short course
DSD	Dermatology Service Department
EPI	Expanded Program on Immunization
FAO	Food and Agricultural Organization
FCTC	Framework Convention on Tobacco Control
FOB	Foundation for the Development of the Interior
GAVI	Global Alliance for Vaccines and Immunization
GBV	Gender Based Violence
GDP	Gross Domestic Product

Gini index	A measure of statistical dispersion developed by the Italian statistician and sociologist Corrado Gini
GLO	Primary School
GNP	Gross National Product
GPs	General Practitioners
GSHS	Suriname Global School-based health Survey
HAA	Health Agenda for the Americas
HPI	Human Poverty Index
HRH	Human Resources for Health
IATA	International Air Transport Association
IDB	Inter American Development Bank
IGPA	Integrated Gender Plan of Action
IHR	International Health Regulations
IICA	Inter-American Institute for Cooperation in Agriculture
ILO	International Labor Office
IMF	International Monetary Fund
IPPF	International Planned Parenthood Federation
IsDB	Islamic Development Bank
JTV	Youth Dental Foundation
LBGO	Secondary Vocational School
LVV	Ministry of Agriculture
MARPs	Most At Risk Populations
MDG	Millennium Development Goals
MDR	Multi-drug resistant
MICS	Multiple Indicator Cluster Survey
MOH	Ministry of Health
MOP	Multi Annual Plan
MOSS	Minimum Operating Security Standards
NBG	National Gender Bureau
SOZAVO	Ministry of Social Affairs and Housing
MSM	Men who have sex with men
MULO	Secondary General School
MVN	Marronvrouwen Netwerk
MZ	Medical Mission
NCCR	Nationaal Coordinatie Centrum voor Rampenbeheersing
NCD	Non-communicable diseases
NGO	Non-Government Organization
NHIS	National Health Information System
NSS	Kidney Foundation Suriname
NTD	Neglected Tropical Diseases
OAS	Organization American States
OCPC	Caribbean Program Coordination
OECD	Organization for Economic Co-operation and Development
OOP	out-of-pocket money

ORAS CONHU	Andean Health Organization - Hipólito Unanue treaty
PAHO	Pan American Health Organization
PAHO/WHO	Pan American Health Organization/World Health Organization
PANCAP	PAN Caribbean Partnership Against HIV/AIDS
PAS	Pater Ahlbrinck Stichting
PASB	Pan American Sanitary Bureau
PCS	Suriname Psychiatric Center
PHC	Primary Health Care
PHCO	PAHO HIV Caribbean Office
PHP	Public Health Program
PMTCT	Prevention of Mother-to-Child Transmission
RPBP	Regional Program Budget Policy
RGD	Regional Health Services
SAP	Structural Adjustment Program
SRD	Suriname Dollar
SRH	Sexual and reproductive health
STH	Soil-transmitted Helminthes
STI	Sexually Transmitted Infections
SWM	Suriname National Water Supply Company
SZF	State Health Insurance Foundation
TB	Tuberculosis Disease
TCC	Technical Cooperation among Countries
THE	Total Health Expenditures
UN	United Nations
UNASUR	Union of South American Nations
UNCT	United Nations Country Team
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WTO	World Trade Organization
YLL	Years Of Life Lost

Annex 2. Example of NGOs Serving Key Populations of Interest

NGO Name	Field of Activity	Objective	Target Groups
Marronvrouwen Netwerk (MVN)	Maroon Women	Advancement of Maroon Women	Maroon Women
Pater Ahlbrinck Stichting (PAS)	Maroon and Indigenous Communities	Sustainable development	Maroon and Indigenous Communities
Stichting Moiwana	Human Rights	Human Rights Watch dog and Advocacy	Suriname Society
Bureau Forum NGOs (BFN)	Basic Provisions/Economic Empowerment/Environment and Health	Sustainable development	Maroon and indigenous Communities, urban/regional organizations
Stichting LOBI	Leading Foundation for Sexual and Reproductive Care	Family planning, healthy sexuality, healthy relationships and a healthy sexual life.	Communities in the interior
ProHealth	Promote health development in communities and contribute to a better understanding about social, gender and other factors related to health.	Social, gender and other factors related to health	People living in poverty have specific health problems related to poverty
Double positive	HIV AIDS	Empower and support women/girls who are infected and affected with HIV through advocacy, research, partnership, capacity building and fundraising	women/girls who are infected and affected with HIV
He and HIV	MSM	To reduce the transmission of HIV among gay men and other men having sex with men, by promoting a healthy lifestyle	Gay men and other men having sex with men (MSM)
WomensWay	Human Rights	To create a platform for women who (also) love women in Suriname and the rest of the CARICOM	women who (also) love women
Rachab eerder Maxi Linder	HIV/AIDS	HIV/AIDS prevention.	
Liefdevolle handen (Loving Hands)	Women Empowerment	Empowers women to take their place in family and in society in a positive	Commercial sex workers (who want the profession) and addicted women.
Stibula	Development	learning and development opportunities for children and young people	Children and young people in the Latour region.
Projecta	Gender equality	Organization for Women and Development	Women
Claudia A	VIH AIDS	shelter	orphans, women with AIDS or HIV infection
Parelhuis	HIV-infected children	Shelter	rejected or abandoned

NGO Name	Field of Activity	Objective	Target Groups
			children with HIV
Crisishuis		Shelter	Children?
HIV Vereniging i.o.	HIV/AIDS		
Victory Outreach	Rehabilitation	Rehabilitation	Drug addicts
Stichting Diabetes Educatie Suriname (SDES)	Diabetes	Raise awareness about diabetes and lifestyle Education programs, patient information, educational support and outreach projects for the young (summer camp), promoting physical activity, organizing World Diabetes Day activities in Suriname	Diabetes patients and their family / health care workers
Diabetes Association Suriname **(DVS)**	Patients association	Support diabetes patients through organized information sessions on diabetes, and related complications	Diabetes patients and their family

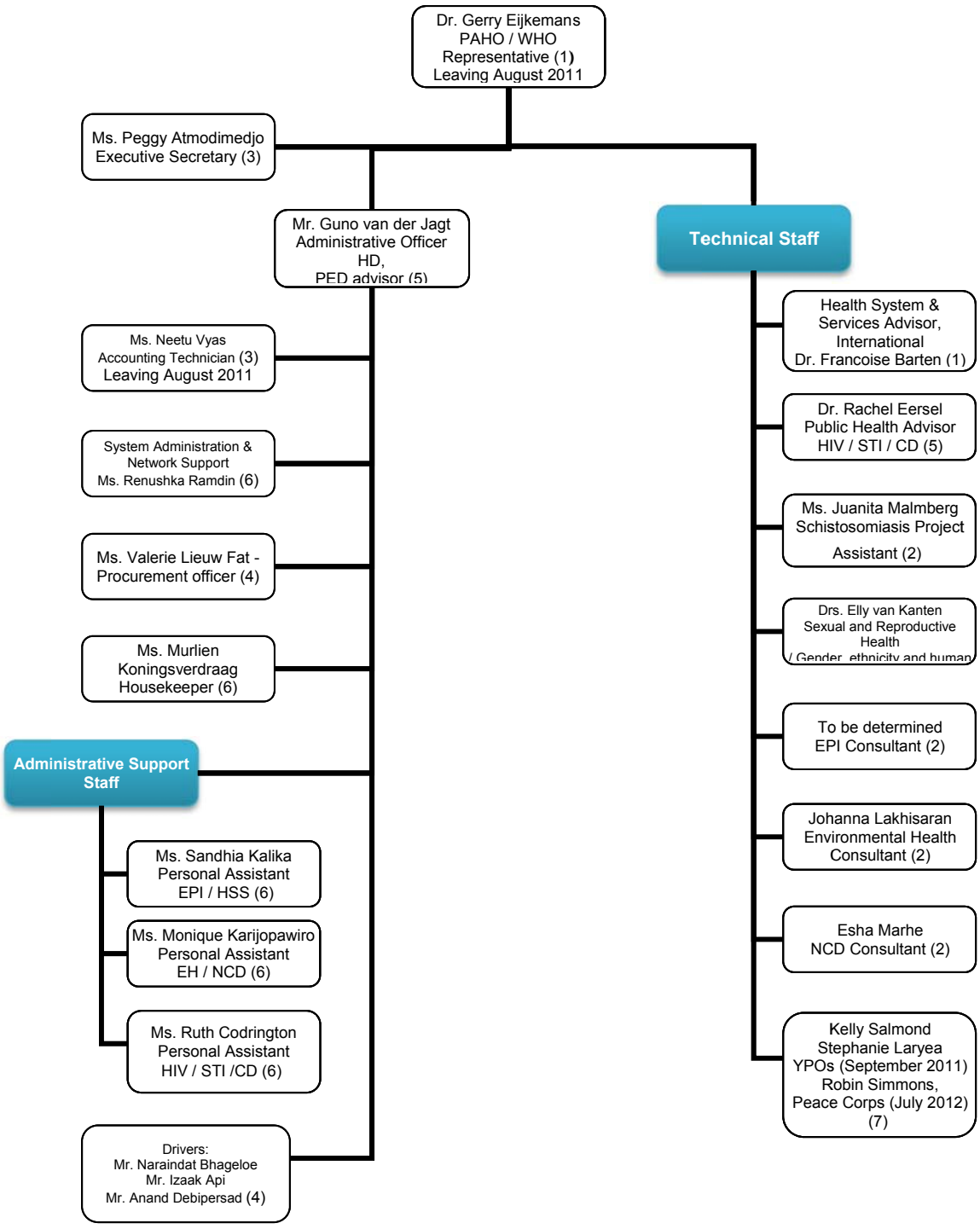
Source: (Muskiet, 2010)

Annex 3. UNCT Health Mapping Exercise

UNFPA = ● UNICEF = 0 UNDP = X PAHO = √

	TOPIC	LEADING ROLE		CONTRIBUTING		NO PART AT ALL
		TECHN	FIN	TECHN	FIN	
1. FAMILY AND COMMUNITY HEALTH (Lifecycle Approach)						
1.1	Maternal & Neonatal Health	√		• X 0	•	
1.2	Child Health (U5)	√		• X 0	0	
1.3	Youth/Adolescent Health	√		• X 0	•	
1.4	(Pre)Senior Health			• X		0
1.5	Sexual & Reproductive Health	√ ●	•	0		
2. DISEASE PREVENTION AND CONTROL						
2.1	Immunization	√		X 0	0	•
2.2	Communicable Diseases (incl. HIV/TB/malaria)	√		• X 0	• X 0	
2.3	Chronic Non-Communicable Diseases	√		X 0		•
2.4	International Health Regulation	√		• X		0
2.5	Nutrition, Food safety, Food Security			X 0	0	•
2.6	Mental Health			• X	•	0
2.7	Violence and Injury Prevention	√		• X	•	0
3. HEALTH SYSTEMS & SERVICES						
3.1	Service delivery	√		• X 0	• 0	
3.2	Human Resources	√		X 0	0	•
3.3	Health Information	√		• X 0	• 0	
3.4	Medical products, vaccines and technologies			• X 0	• 0	
3.5	Health systems financing	√		• X		0
3.6	Leadership and Governance			X		• 0
4. ENVIRONMENTAL HEALTH & HEALTH DISASTER PREPAREDNESS						
4.1	Health determinants (social & economic)	√		• X	•	0
4.2	Water & Sanitation			X 0	0	•
4.3	Healthy settings (home, school. workplace)	√		X		• 0
4.4	Health Disaster/Emergency Preparedness	√		• X	• X	0
5. CROSSCUTTING ISSUES (Health Equity, Pro-Poor, Gender Responsive, Human Rights based approaches)						
5.1	Human Rights	0	0	• X	• X	
5.2	Health Promotion (risk reduction factors)	√		• X 0	• X	
5.3	Ethnicity (Indigenous population)			• X 0	• X	
5.4	Social Protection	0	0	• X	• X	
5.5	Gender	√		• X 0	•	
5.6	Primary Health Care	√		• X 0	• 0	

Annex 4. PAHO/WHO Suriname Organization Chart (as of August 2011)



1. PAHO Professional Staff; 2. Consultants; 3. PAHO GS Staff; 4. MOH Staff; 5. National Officers; 6. Employment Agency; 7. Temporary Staff

Annex 5. Assessment of CCS Priority Areas against WHO's Core Functions

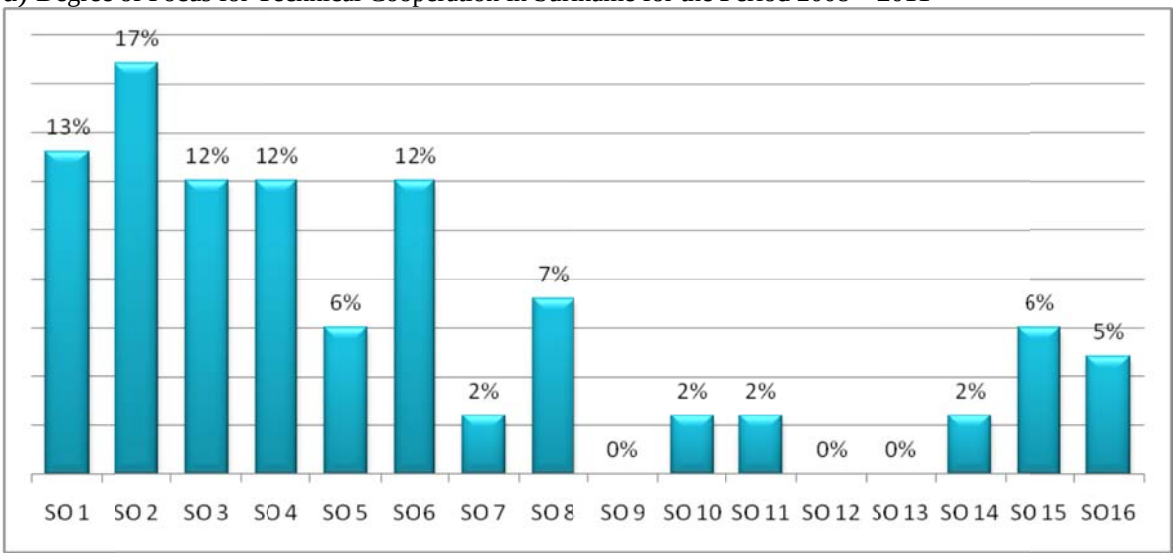
Main Focus Areas	CORE FUNCTIONS					
	1. Providing leadership on matters critical to health and engaging in partnerships where joint action is needed	2. Shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge	3. Setting norms and standards and promoting and monitoring their implementation	4. Articulating ethical and evidence-based policy options	5. Providing technical cooperation catalyzing change and building sustainable development	6. Monitoring the health situation and assessing health trends
Strategic Priority Area #1: Reducing the Burden of Disease						
1.1. Reducing the burden of NCDs	++	+	++	+	+++	++
1.2. Strengthening community-based mental health	+	+			++	+
1.3. Reducing the communicable disease burden	++	+	+	+	++	++
1.4. Enhancing family health over the life course	++	+	+	+	+++	++
1.5. Reducing violence and injuries	++	+		+	++	

Main Focus Areas	CORE FUNCTIONS					
	1. Providing leadership on matters critical to health and engaging in partnerships where joint action is needed	2. Shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge	3. Setting norms and standards and promoting and monitoring their implementation	4. Articulating ethical and evidence-based policy options	5. Providing technical cooperation catalyzing change and building sustainable development	6. Monitoring the health situation and assessing health trends
Strategic Priority Area #2: Strengthening Health Systems and Services based on Primary Health Care						
2.1. Strengthening health planning	+		+	+	+	
2.2. Strengthening health services	++		+	++	++	+
2.3. Optimizing health financing	++			++	++	
2.4. Enhancing human resources for health		+		+	+++	
2.5. Increasing the strategic production and use of health information	++	++	++		++	+

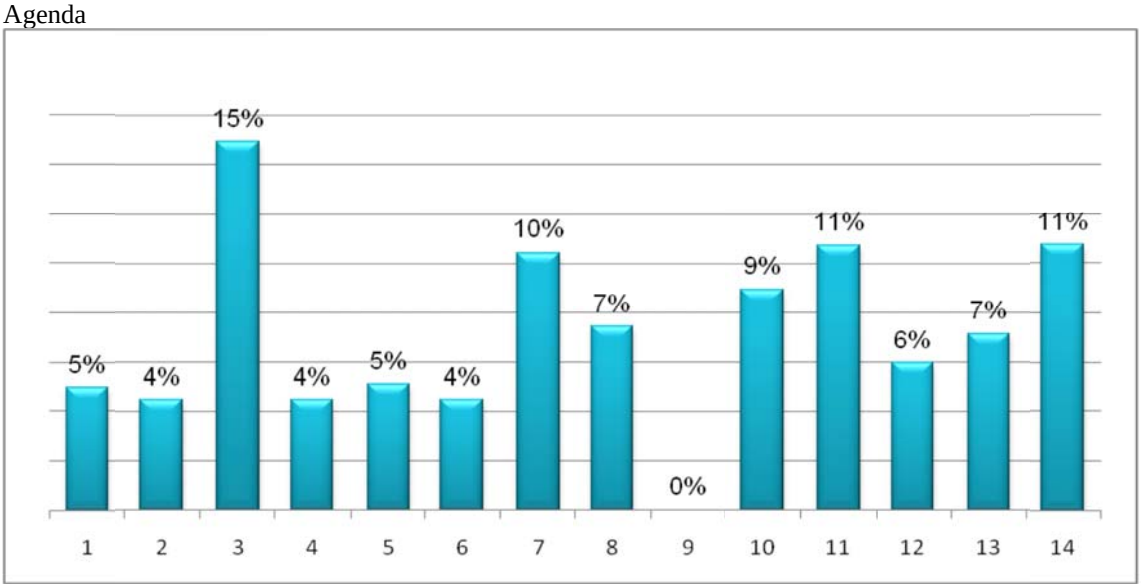
Main Focus Areas	CORE FUNCTIONS					
	1. Providing leadership on matters critical to health and engaging in partnerships where joint action is needed	2. Shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge	3. Setting norms and standards and promoting and monitoring their implementation	4. Articulating ethical and evidence-based policy options	5. Providing technical cooperation catalyzing change and building sustainable development	6. Monitoring the health situation and assessing health trends
Strategic Priority Area #3: Addressing the Determinants of Health						
3.1. Strengthening national response to environmental health threats	+++	+	++	+	++	+
3.2. Strengthening capacity and coordination to address Workers' Health	++	+	++	+	+++	
3.3. Improving the management of emergencies and disasters	++	+	+	+	+	+
3.4. Advancing on social determinants of health	+++	++	+	+	++	+

Annex 6. Degree of Focus for Technical Cooperation in Suriname for the Periods 2008 – 2011 and 2012 – 2016

a) Degree of Focus for Technical Cooperation in Suriname for the Period 2008 – 2011



b) Degree of Focus for Technical Cooperation in Suriname for the Period 2012-2016 based on CCS Strategic Agenda



Annex 7. Mapping results based on the subcomponents of the CCS connected with the RERs and Strategic Objectives (SO) of the Strategic Plan

Strategic objective (1)	Significant RERs (whole CCS period) (2)	Sub-component (in mapping template) (3)
SO1	1.3, 1.4, 1.5, 1.6, 1.7	1.3 Reducing the infectious diseases burden (develop, update and implement evidence-informed frameworks, norms and standards for priority infectious diseases, with an emphasis on MTCT and NTDs; leadership and partnerships to prevent and control priority infectious diseases; integrated surveillance system and incorporate epidemic alert and response)
SO2	2.1, 2.4, 2.5	1.3 Reducing the infectious diseases burden (develop, update and implement evidence-informed frameworks, norms and standards for priority infectious diseases, with an emphasis on MTCT and NTDs; leadership and partnerships to prevent and control priority infectious diseases; integrated surveillance system and incorporate epidemic alert and response)
SO3	3.2, 3.3, 3.4, 3.6	1.1 Reducing the burden of NCDs (develop and implement evidence-informed policies and plans; norms and standards for integrated management of NCDs; promote healthy lifestyles and enabling environments including FCTC; system for surveillance of risk factors and NCDs linking to national health info system)
	3.2, 3.3, 3.6	1.2 Strengthening community-based mental health (integrate mental health into PHC; strengthen the framework for mental health)
	3.2, 3.3, 3.6	1.5 Reducing violence and injuries (partnerships and inter-country exchange for development and implementation of evidence based frameworks; leadership to strengthen human and institutional capacities to address violence and injuries)
SO4	4.1, 4.2, 4.3, 4.7	1.4 Enhancing family health over the life course (develop national comprehensive, evidence-informed frameworks that promote universal access to a continuum of care; leadership and partnerships to strengthen family health over the life course; inter-country exchange to develop and improve norms and protocols; improve information and surveillance systems and implement proven interventions that address gaps emphasizing maternal and infant mortality)
SO5	5.1, 5.2, 5.4, 5.6	3.3 Improving the management of emergencies and disasters (TC for the implementation and monitoring of the Safe Hospital Initiative; TC for institutional strengthening for risk reduction, response to emergencies and disasters, and addressing health impact of climate change)
SO6	6.1, 6.2, 6.3	1.1. Reducing the burden of NCDs (develop and implement evidence-informed policies and plans; norms and standards for integrated management of NCDs; promote healthy lifestyles and enabling environments including FCTC; system for surveillance of risk factors and NCDs linking to national health info system)
SO7	7.1, 7.2, 7.3, 7.4, 7.5, 7.6	3.4 Advancing on social determinants of health (leadership to review and monitor the implementation of international agreements on human rights and health and the MDGs; increase the understanding on the influence of social determinants of health (gender, poverty, ethnicity, geography, etc.); research and partnerships to analyze national context of the social determinants of health)
	7.3	2.5 Increasing the strategic production and use of health information (TC and south-south collaboration for an integrated and standardized health information system, with data that are disaggregated by sex, age, ethnicity, and other key variables; packaging and dissemination of health and health-

		related information; leadership on the strategic use of health information)
SO8	8.1, 8.4, 8.5	3.1 Strengthening national response to environmental health threats (TC and partnerships in developing, reforming, updating frameworks, norms, and standards to address priority environmental health risks; generation, translation, and dissemination of knowledge on environmental health issues; leadership to strengthen coordination among sectors and stakeholders involved in environmental health)
	8.3	3.2 Strengthening capacity and coordination to address workers' health (develop a framework to address workers' health, strengthen coordination among sectors and stakeholders regarding workers' health; strengthen human and institutional capacity to address workers' health)
	8.6	3.3 Improving the management of emergencies and disasters (TC for the implementation and monitoring of the Safe Hospital Initiative; TC for institutional strengthening for risk reduction, response to emergencies and disasters, and addressing health impact of climate change)
SO10	10.1, 10.3	2.2 Strengthening health services (policy options and inter-country exchanges for the renewal of PHC to increase coverage of underserved populations; norms and standards for quality improvement of health services and use of innovative technologies for health)
	10.3	3.3 Improving the management of emergencies and disasters (TC for the implementation and monitoring of the Safe Hospital Initiative; TC for institutional strengthening for risk reduction, response to emergencies and disasters, and addressing health impact of climate change)
SO11	11.1	2.1 strengthening health planning (leadership and TC for the development, implementation, monitoring and evaluation of a National Health Sector Agenda)
	11.2	1.1. Reducing the burden of NCDs (develop and implement evidence-informed policies and plans; norms and standards for integrated management of NCDs; promote healthy lifestyles and enabling environments including FCTC; system for surveillance of risk factors and NCDs linking to national health info system)
	11.2, 11.3, 11.5	2.5 Increasing the strategic production and use of health information (TC and south-south collaboration for an integrated and standardized health information system, with data that are disaggregated by sex, age, ethnicity, and other key variables; packaging and dissemination of health and health-related information; leadership on the strategic use of health information)
	11.3	3.4 Advancing on social determinants of health (leadership to review and monitor the implementation of international agreements on human rights and health and the MDGs; increase the understanding on the influence of social determinants of health (gender, poverty, ethnicity, geography, etc.); research and partnerships to analyze national context of the social determinants of health)
SO12	12.1, 12.2	2.2 Strengthening health services (policy options and inter-country exchanges for the renewal of PHC to increase coverage of underserved populations; norms and standards for quality improvement of health services and use of innovative technologies for health)
SO13	13.1, 13.2, 13.3, 13.4	2.4 Enhancing human resources for health (policy options for the optimal mix, number and distribution of HRH related to current and projected needs; TC to improve the competencies and institutional environment for greater efficiency and effectiveness of HRH)
SO14	14.1, 14.2, 14.3, 14.4	2.3 Optimizing health financing (policy options and partnerships for improving the funding of the health sector; establishment of a mechanism for health financing that will increase coverage, reduce inequities, promote efficiency and protect against financial risk)

	14.5	2.2 Strengthening health services (policy options and inter-country exchanges for the renewal of PHC to increase coverage of underserved populations; norms and standards for quality improvement of health services and use of innovative technologies for health)
	14.5	2.5 Increasing the strategic production and use of health information (TC and south-south collaboration for an integrated and standardized health information system, with data that are disaggregated by sex, age, ethnicity, and other key variables; packaging and dissemination of health and health-related information; leadership on the strategic use of health information)