Mapping and Analysis of Primary Health Care Models in South American Countries

Mapping of PHC in Guyana

Consultant: Hedwig Goede

Auctorial document on PHC in South American countries

UNASUR
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Instituto Suramericano de Gobierno en Salud
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Mapping of Primary Health Care Models in South American Countries

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MAPPING OF PHC IN GUYANA[1]

BACKGROUND

Objectives and Methodology

This document reports on the mapping of Primary Health Care (PHC) in Guyana and is part of the work of ISAGS on building knowledge in PHC models and experiences among the South American countries. It is expected that the mapping will contribute to useful information that will support governments in identifying strategic policies and facilitating political decision-making related to the construction of universal health systems in the South American region.

The mapping took place in the period February- May 2014 and was based on the analytical framework developed by ISAGS. The framework was presented in a matrix with various dimensions of Primary Health Care that included PHC conduction, funding, service provision, organization, coordination and integration, workforce, inter-sectoral actions, inter-culturality, social participation in PHC as well as planning, information systems and quality monitoring.

Between 4 and 7 March 2014 a visit was made to Guyana comprising of several activities for the mapping. It included the collection of documents for review, discussions with health officials and key actors from the policy- and management level of PHC and a field visit to the Upper Demerara-Berbice region (region 10). The field visit to region 10 involved observations at facilities of four levels of care, discussions with managers and frontline healthcare workers as well as a meeting with the Regional Health Committee. The Chief Medical Officer (CMO) made the arrangements and accompanied the consultant during the field trip.

A noteworthy enthusiasm and involvement of health officials and healthcare workers on the mapping exercise was observed throughout the country visit. Therefore, credit for finalizing this chapter should be given to all met during the visit and specifically to the commitment and indispensable support of the CMO, Dr. Shamdeo Persaud, and to the endorsement of the importance of the PHC mapping for Guyana by the Minister of Health, Dr. Bheri Ramsaran.[2]

The Minister mentioned that PHC has been the foundation of the national health system in Guyana for long and PHC is viewed as a comprehensive strategy that includes not only the provision of services, but also addressing the social determinants of health. The Minister underlined the importance of sharing experiences with other countries in South America and particular presenting the shared healthcare delivery challenges of Guyana and Suriname as small

1 This document was prepared by a consultant. The opinions expressed herein are the responsibility of the authors and don´t express the position of ISAGS or the Ministry of Health of the country or the professionals interviewed

2 Complete list of Persons met is presented in the acknowledgement section

size populations with challenged accessibility of the large, but sparsely populated, Hinterlands. He welcomed the study.

The sources utilized for the PHC Mapping are presented in table 1.

Table 1: Sources for the Mapping of PHC in Guyana

Documents	- National development Plans and recent budget speeches of the government - Health Policies and Health Plans and Strategies, - Published academic articles - Published and unpublished reports on studies, assessments, analysis related to PHC and health statistical bulletins - Curricula of training programs for frontline healthcare workers
Meetings and Interviews	- **Policy and highest administrative and technical level:** The honorable Minister of Health, the Permanent Secretary of Health, the Chief Medical Officer - **Managers MOH:** Heads and staff of the Regional Health Services department, Planning department, Statistics unit, Maternal and Child Health program, Health Science Education department, Chief Nursing Officer, Chief Medex - **Regional Health Committee:** Members of the RHC of region 10 - Regional health managers and workers: Regional- and District Hospital managers, frontline PHC workers
Field visits and observations at facilities	- Upper Demerara-Berbice region (region 10): Health Post (level 1), Health Clinic (level 2), Upper West Demerara District Hospital (level 3) and The Mc Kenzie Regional Hospital (level 4)

Background Guyana

The Cooperative Republic of Guyana is divided into 10 administrative regions with 10 Regional Democratic Councils (RDC) as local government structures. The RDCs are further divided in sub-regional structures comprised of 65 Neighborhood councils, 6 municipalities and 76 Amerindian Village Councils.

The country was a former colony of the British Kingdom and gained independence in 1966.

The population is multi-ethnic and multi-cultural. Less than 10% of the population belongs to one of the Indigenous populations (Amerindians), 43% are Indo-Guyanese, 30% Afro-Guyanese and close to 17% mixed. The majority of the population (85%) lives at the coastal belt.

Guyana is a member of the Caribbean Community (CARICOM) and of UNASUR. Guyana can be distinguished from the rest of the South American countries, for having English as its formal language, and for its small urban population (26.4%) (Guyana Bureau of Statistics - Census 2012, 2014b). In most South American countries the majority of the population lives in large cities and the average urban population of South America is close to 80% (World Bank, 2014).

Guyana has a significant and turbulent political-, and social economic history. During the debt crisis of the Eighties the country was faced with devastating situations; basic supplies were scarce, daily interruption of water supply and of electricity for long hours even in the capital city. The country was previously classified as Heavily Indebted Poor Country (HIPC), but made important strides forward in recovering its social-economic status and is now repositioned as a lower middle income country. The net migration in the crisis period of the Eighties was an estimated - 85,000; about 11% of the total population (World Bank, 2014). This resulted in an annual negative growth rate of – 0.34%. In the following ten years (1991-2002) a positive growth rate of 0.34% occurred. However, the latest census

2012 shows that in the last decade (2002-2012) the country experienced again a negative growth rate of -0.04%; this time resulting in a marginal reduction of the population. (Guyana Bureau of Statistics - Census 2012, 2014b). Expecting an annual natural growth rate around 1%, this finding confirms that Guyana remains a country with a high outward migration that fluctuates over time. The growth rate varies by regions and the urban areas show the highest reductions, while the Hinterland regions the highest percent increase in population size. Outward migration involves a very high proportion of well-educated individuals. From the immigrants coming from Guyana to the USA about 90% have tertiary education. (Docquier & Marfouk, 2005) This results in a huge loss of professionals, skilled workers and managers mainly to the USA, the Caribbean, Canada and the UK.

Among the professionals lost with outward migration are healthcare professionals. Over time measures have been taken by the government to continue healthcare service provision and expand services to remote areas despite the scarce human resources. These measures will be presented in this document.

Table 2: General information, Guyana

Location	North-east of the South American continent, bordering Venezuela, Suriname, Brazil and the Atlantic Ocean
Land mass	Land mass: 215,000 Km²
Administrative division	Ten administrative regions
Total population	748,900 (2012)
Population settlements and density (2012 Census)	Total Coastal: + 89.1% Interior: + 10.9 % Urban: 26.4 % Rural: 73.6%, (of which Rural Coastal: 62.7% and Rural Interior: 10.9%) Total population density: 3.5/ Km² Largest density in region 4: 140.4/ Km² Smallest density in region 7 and 9: 0.4/ Km²
Ethnic groups, % population	Indo-Guyanese 43%, Afro-Guyanese 30%, Mixed 16.7%, Amerindians 9.2%, Portuguese and Chinese 1%.
Language	Official language: English, nine other languages from Indigenous tribes
Economy	Classification: lower middle income (World Bank 2013) GDP: 3,584 US$/capita (World Bank 2013) Stable economic growth since 2006 of an average of 4 annually (5.3 in 2013) Economy: Agriculture (Sugar, Rice), Mining (Gold, Diamonds and Bauxite)

Sources: (Ministry of Finance Guyana, 2013), (Guyana Bureau of Statistics - Census 2012, 2014b) (World Bank, 2014)

Health system

Health is a constitutional right in Guyana and has been prioritized in all national development plans and strategies; the National Development Strategy, the Poverty Reduction Strategy Paper and the national agenda for the Millennium Development Goals (MDGs). Improving health of the population has therefore national support above the level of the Ministry of Health. In addition, Guyana has been able to mobilize considerable funds (loans, grants) from multilateral- and bilateral organizations and has utilized debt relief to strengthen the health system. The country mobilized in 2006, based on the

historical friendship with Cuba, also significant support from Cuba, far beyond the utilization of the Cuban medical brigade in previous years.

The Ministry of Health is the national health authority. The Ministry of Health Act of 2005 stipulates the mandate and tasks of the Ministry. Policy development, planning, including workforce planning and budgeting, regulation, standard setting and quality monitoring, research and surveillance, and oversight of health facilities and providers are among the tasks. (Government of Guyana, 2005a) Specific mention should be made about the task to close service agreements with Regional Health Authorities. Traditionally, the Ministry of Health was not only responsible for steering of the health sector, but also directly responsible for free healthcare service provision to the population up till 1986. With decentralization, the Regional Democratic Councils (RDCs) received responsibility for healthcare service provision in the region. (Government of Guyana, 1998)The Ministry of Health remains responsible for the vertical programmes.

A third development in the health system is the introduction of the Regional Health Authority (RHA). The Regional Health Authority Act passed in 2005 and describes the tasks and governance and management structure of the RHA responsible for healthcare in regions. The Berbice RHA is sofar the only RHA established. RHA are autonomous entities and assess, plan and implement health services and manage the facilities for a defined population in a defined geographic area.

In the 2008-2012 National Health Strategy *decentralization of health services* was one of the five strategic components. (Ministry of Health Guyana, 2008)

In the Health Vision 2020 decentralization of health services continues to be a priority and establishing four other RHA are planned. This will be important, because Health Vision 2020 identifies strengthening of Integrated Health Service Delivery Networks as a key strategy for improving health and strengthening PHC (Ministry of Health Guyana, 2013b). RHA are therefore essential in overcoming fragmentation in service provision and in strengthening integration of vertical programs into the regional service delivery networks.

Health Vision 2020 confirms that Guyana will continue basing the health system on Primary Health Care.

The top structure of the Ministry consists of the Minister as Head, The Permanent Secretary of Health and the Chief Medical Officer. Additional leading technical positions include the Chief Nursing Officer, the Chief Medex, the Chief Pharmacist and the directors of departments and heads of units.

The Ministry of Health exercises its role through various departments and programs (Table 3).

Table 3: Departments and other structures of the Central Ministry of Health, Guyana

Technical Departments	Department of Disease Control Department of Regional Health Services Primary Health Care Programme Department of Rehabilitation Services Department of Standards and Technical Services Department of Health Science Education
Administrative Departments	Budgeting, Finance, Accounting and Auditing Personnel Division Health Planning Health Information System Statistics Unit Material Management Unit/Central Procurement Health Sector Development Unit
Councils	Medical Council of Guyana General Nursing Council Pharmacy Council Dental Council Allied Health Professions Council
Boards	Central Board of Health Institutional Review and Ethics Board Termination of Pregnancy Board Pharmacy and Poisons Board

PRIMARY HEALTH CARE CONDUCTION

Concept of PHC

In Guyana an initial concept of Primary Health Care as a strategy to Health For All preceded the Alma Ata PHC Conference. In 1977, prior to Alma Ata, Guyana started the Medex program immediately followed by the Community Health Worker (CHW) program. These two non-conventional categories of healthcare workers were assigned the tasks of bringing Primary Health Care to those who were till so far to a great extend excluded from health services. Review of the Medex training program and the CHW working books shows that characteristics of PHC were included in the training. (University of Hawaii, 1983)

The Ministry of Health Act of 2005, which stipulates the tasks of the Ministry, covers in her introductory paragraph key considerations one of which is stated*; "whereas, national priorities must emphasize the promotion and primary components of health programmes with concurrent attention given to their secondary and tertiary counterparts".* (Ministry of Health Act, 2005)

Although Primary Health Care is not explicitly defined in health policy plans or in legislation, all key health documents refer to the concept and practice of Primary Health Care. PHC is both conceptualize as a strategy as well as the first level of care.

The Primary Health Care program of the Ministry of Health objective is defined as: *"To ensure the Guyanese public has access to equitable, accessible, technically competent and socially acceptable primary health care".* This objective indicates that PHC is viewed as a strategy to achieve social justice and equity in healthcare.

Other documents refer primarily to PHC as level of care; level one and two in the five tier structure of health services in the country. Key characteristics of comprehensive PHC, such as social participation and intersectoral collaboration are mentioned in the latest Health Strategy document (Health Vision 2020) as essential to the health care system, next to PHC and not as integral part of comprehensive PHC. In these cases PHC is referred to as the delivery of first line services. However, the package of publicly guaranteed health services (PPGHS) shows a comprehensive view on PHC. It includes promotion of health and addressing social determinants and is not narrowed down to medical services to individuals. This concept is returning in official government documents outside the Ministry of Health such as the annual budget speeches of the Minister of Finance.

The right to healthcare free of charge is enshrined in the constitution.

Article 24[3] of the Constitution states: *every citizen has the right to free medical attention and also to social care in case of old age or disability*.

The link to determinants of health and to social participation is made in article 25 of the constitution.

3 Constitution of the Co-operative Republic of Guyana

Art. 25 states: *Every citizen has the duty to participate in activities designed to improve the environment and to protect the health of the nation.*

The Ministry of Health Act 2005 refers to a shared responsibility between state and individuals with regards to health.

The National Insurance Scheme (NIS), compulsory for all employed persons between 16 and 60 years of age, covers social- and sickness benefits and medical care. It doesn't refer specifically to PHC. Its focus is on ensuring social protection during illness. (National Insurance Scheme Guyana, 2014).

Attributions of subnational governmental spheres

Guyana is decentralized and has local governance structures under the jurisdiction of the Ministry of Local Government and Regional Development. Role and functions are legally laid down in the Municipal and District Councils Act 1988 and the Local Government Act 1998. There are six municipalities; these are only in the urban and semi-urban regions. All ten regions do have a Regional Democratic Council.

The Regional Democratic Council (RDC) consists of elected members and an elected chair and is the highest governance structure at regional level and responsible for all social services in the region. A Regional Executive Officer (REO) is tasked with the daily administration, the accounting officer and responsible for the regional budget.

Each RDC has a Health Department and a Regional Health Committee (RHC). The local structures play a key role in PHC. The membership of the RHC includes 50% of elected councillors representing specific constituents and 50% representing stakeholders of health institutions. The Regional Health Officer serves as the secretary of the RHC. The RHC is the platform that brings together stakeholders from the health sector and regional leaders in health planning.

Health expenditures within the public system are shared by the Ministry of Health and the Regional Democratic Council.

At regional level the link between the Ministry of Health and the ministry of Local Government is made through the Regional Health Officer who represents the MOH and the Regional executive officer who reports to the Ministry of Local Government and to the Chair of the RDC. (Source: interviews region 10 Regional Health Council).

Through the regional structures and institutions participation in policy development, regional health planning and implementation of the regional health plan takes place. Each region has numerous neighbourhood democratic councils, community development councils and youth councils with who local action can be taken in the area of health.

The Regional Health Officer is responsible for the health plan and budgeting and at the same time has the oversight over Primary Health Care in the region. However, the Regional Executive Officer (REO) is accountable for the regional budget and health spending from the regional budget needs to be approved by the REO. This

involves a bureaucratic process that can make it difficult spending funds allocated to health in a timely manner.

The Ministry of Health is providing technical and professional support to the RDCs, however challenges remain at the regional and local level in planning and administering health services. The Ministry of Health experienced that the devolution of health service provision to the RDCs lack accountability for poor performance and stated that *"RDCs lack the degree of autonomy required to manage staff and services efficiently"* ((Ministry of Health Guyana, 2008)

The country is in a process of shifting the responsibility for health service provision away from the RDCs to Regional Health Authorities (RHA). The Regional Health Authority (RHA) act and the Ministry of Health act changed the role of the central Ministry of Health into a regulating role and health service functions will be devolved to the RHAs. RHA authority boards are appointed by the Minister of Health and have service contracts with the Ministry of Health. (Government of Guyana, 2005a) (Government of Guyana, 2005b)To date one RHA has been established in Region 6 and four additional RHAs are planned to be established. It is expected that the system of RHAs, as autonomous entities, bound by a service contract with the Ministry of Health will be able to improve performance management and increase accountability. (Ministry of Health Guyana, 2013b).

Other relevant actors in PHC policies

Other actors in health policy development include the Caribbean Community (Caricom); as a member state Guyana signed the Caribbean Cooperation in Health framework (CCH-III). The UN agencies in particular PAHO/WHO, Unicef and UNFPA, the Caribbean Public Health Agency (CARPHA), and development banks (the Inter-American Development Bank (IADB), World Bank).

Other multi- and bilateral partners provide technical support and funding to health and influence in this way health policy development indirectly. These include the Global Fund for AIDS, TB and Malaria (GFATM), Global Alliance for Vaccine Initiative (GAVI), the US Agency for International Development (USAID), Canadian International Development Agency (CIDA), Cuba, the European Union (EU) and Japan Development Cooperation Agency (JDCA).

Unasur through its work on health systems is a new actor to the country with attention to PHC and universal health systems.

PHC FUNDING

By the end of 2013 Guyana conducted a Health Financing assessment that will yield important information on funding, expenditures and other health financing parameters. However, the findings on this assessment were not available at the time that this PHC mapping was completed. A National Health Account has not yet been established.

PHC funding sources and Expenditures

The Government of Guyana takes responsibility for provision of health services free of charge to the entire population. PHC is therefore mainly public funded supplemented with donor funding. It was estimated that in 2009 the sources of health funding were 40% from the government, 48% from external funding (donor funds) mainly targeting priority diseases and vertical programs and 12% out-of-pocket household spending on private services. (Persaud Shamdeo, Chief Medical Officer Guyana, 2011)

As a HIPC and implementing the poverty reduction strategy paper Guyana was successful in mobilizing extensive external funds for the health sector. In 2005 external resources for health as % of total health expenditure was an estimated 47.1 % and decreased to 22.0 % in 2010. (World Health Organization, 2014a). This last percentage was still double the 11 % average of lower middle income countries. In 2012 Guyana's external resources for health (WHO estimate 10.9%) have been leveled to the average of lower middle income countries.

However, a significant increase in overall national health spending[4] took place in recent years from a low of US$ 58 per capita total expenditure in 2005 to 235 US$ in 2012. (World Health Organization, 2014a)

Government expenditures on health as % of national Government expenditures are 8.5% in 2013. (Ministry of Finance Guyana, 2013)

Expenditures on health as % of GDP increased from 4.1% in 2005 to 6.6% in 2012. Government expenditures on health as % of total government expenditures increased from 8.1% in 2005 to 13.1% in 2012. (World Health Organization, 2014a)

PHC expenditures in 2009 as % of Total Health Expenditure of the government is an estimate of 8%, while that of hospitals is 38%. (Health Systems 20/20 and the Guyana Ministry of Health, 2011).

4 At average exchange rate US$

PHC funding in insurances

The National Insurance Scheme (NIS) applies only to those employed or self-employed. No information was obtained from the volume of claims of individuals to NIS and reimbursement by NIS for spending to healthcare in the private health sector. It should be noted that the emphasis of NIS is on financial protection of individuals in case of illness; loss of income. (National Insurance Scheme Guyana, 2014) It is not on guaranteeing access to healthcare since this is covered by the universal health system of the government free of charge to all in Guyana. Only about 18% of women and 32% of men are enrolled in the NIS. (Ministry of Health and Guyana Bureau of Statistics DHS, 2009).

Existence of co-payments in PHC

All citizens have the constitutional right to free medical care. In the Guyana Public system no co-payments exist on PHC consultations, exams or medication for users, including non-citizens.

As was mentioned, those insured through the NIS could in principle file a claim for reimbursement of costs made (out-of-pocket) for services utilized in the private health sector.

CHARACTERISTICS OF PHC ORGANIZATION AND PROVISION

Characteristics of PHC organization

The facilities, staffing and services are well defined within the public system and organized in an integrated regional health services network for each region.

The total number of PHC units is 321 thus more than 85% of all public and private facilities are PHC units. The private facilities, hospitals as well as health centers, are all but one located in the capital.

The PHC units do have a specific geographically defined population that is served and is registered at the facilities. Patients' medical records are kept.

As the table below shows the Hinterland population is primarily served by the network of health posts staffed by CHWs.

Table 4: Distribution of health facilities by geographic area, Guyanan

Level of Care	Coastal (region 2,3, 4, 5, 6, 10)	Hinterland (region 1, 7, 8, 9)
Level 1: Health post	65	136
Level 2: Health center	217[5]	12
Total # of PHC facilities	**173**	**148**
Level 3: District Hospital	10	8
Level 4: Regional Hospital	5	2
Level 5: National Hospitals	2	0
Private hospitals	6	0
Total # of all facilities	**196**	**158**
% of total population	**About 87%**	**About 13%**

Source: (Ministry of Health, 2014)

Although the Hinterland population has numerous facilities compared to the small proportion of the total population, these guarantee only local access to limited health services.

For access to a broader range of diagnostic and treatment services individuals of the Hinterland will need to overcome large distances and travel frequently over rivers, by road and sometimes by air. Recently, the Ministry of Health has expanded outreach with teams of physicians to the remote areas. This reduces the need for patients to travel to diagnostic centers or hospitals.

Health Posts staffed by CHWs are not restricted to the Hinterland, but also frequently found in villages in the Coastal area.

The working hours of each type of PHC facility are presented in table 4. The average health center is open all weekdays from 8.00 am till 4.00 pm.

While private facilities and private providers in Guyana play hardly any role in the rural areas and remote villages, Guyana's diaspora does contribute on a voluntary basis to healthcare in the country. The

5 Nine of which are private or company polyclinics

network of *Guyana Doctors practicing aboard* implement various health projects, providing outreach PHC, specialist care and training in Guyana in collaboration with the Georgetown Public Hospital and under auspices of the Ministry of Health. (Guyana Doctors Practicing Aboard, 2014). They collaborate also with Ve'Ahavta, a Canadian non-governmental organization, and assemble teams of volunteers to provide mobile PHC services to remote populations. This helps in addressing the backlog in physician's visits to remote populations that are served by mainly CHWs. At the same time it builds capacity of the local frontline healthcare workers.

Oversight and monitoring of PHC services is the responsibility of two units within the MOH.

The *Regional Health Services department* has an oversight and coordinating role. The tasks are to:

1. Oversee and coordinate the functioning of all Regional Health Officers (RHOs)
2. Support the regional health service in provision of quality care for the residents
3. Assist in provision of specialist health care services to regions as deemed necessary
4. Provide for medical evacuation by air of patients to the Georgetown Public Hospital when service is not available in the remote villages
5. Ensure adequate staffing of regional hospitals and health centers
6. Oversee the Referral Systems.

The *PHC program* within the MOH provides direction to priority services and monitors the quality and results of the PHC services. Tasks include:

1. Providing quality health care to women and children including family planning
2. Assessing nutritional needs and status at the national level
3. Develop, implement, monitor and evaluate food and nutrition policies, plans and programs
4. Providing quality preventative, curative and rehabilitative oral health services
5. Improve and monitor the general environmental conditions which impact on the health status of the population, including water supply, disposal of solid waste, agricultural and industrial pollution, food safety and the control of breeding places for vermin
6. Provide primary curative care and primary rehabilitative care
7. Ensure adequate medical supplies.

Characteristics of PHC Provision

Guyana has a Package of Publicly Guaranteed Health Services (PPGHS) that describes the services provided at all levels of care in detail. The package is a broad range of personal services and collective services. It is used as a guiding instrument to make steps forward in improving access to health. Therefore, not all the services are at the moment in place in all of the facilities of the defined levels.

The PPGHS defines not only the services, but also the staffing needs, essential equipment and supplies for each level of care. Medical equipment at the health posts (level 1) are limited to simple tools such as scales, blood pressure meters, thermometers, delivery kits, forceps, glucometers, hemoglobin meters, sterilization equipment, refrigerator or EPI cold box. At the PHC centers (level 2) additional equipment is present such as drip stands, sphygmomanometers, minor surgery kits and at selected centers microscopes and centrifuges. (Ministry of Health Guyana, 2010a)

The range of services is comprehensive. It includes at level 1 and 2 (PHC) care for acute and chronic conditions and extents to community level preventive services, rehabilitation services and oral health, as well as to specific programs for population groups such as adolescents, under-fives, women and the elderly.

Table 5: Overview of facilities by levels of care, Guyana, 2013

Level of care	Number	Facility	Services	Staff
1. Health post	211	Mainly in remote villages along rivers or in Hinterland	Limited PHC services daily from facility or door-to-door mostly preventive care: MCH services, oral health screening, health education, minor wound treatment, screening and monitoring of hypertension and diabetes (fasting glucose test), follow up dispensing of drugs	Community Health Worker
2. Health Center	110 public + 9 private health centers.	**Type 3:** Satellite of type 1 or 2 health center	Comprehensive PHC services, but only on scheduled days (not daily)	Visiting staff from parent health center
		Type 2	Comprehensive PHC services Weekdays (no weekends)	Health team with: Nurse, midwife, medex, physician, lab assistant, pharmacy assistant, dental care assistant, rehab assistant, environmental health assistant
		Type 1	Comprehensive PHC services, Daily (incl. weekends)	
3. District - or community hospital	18		PHC services + some secondary care	Idem + visiting specialists

Level of care	Number	Facility	Services	Staff
4. Regional hospital	7	4A: highest referral for health facilities at regional level	Comprehensive secondary care	Health team incl. medical specialists
		4B: New, modern, diagnostic hospital centers	PHC and secondary health care	
5. National referral hospital	2 + 6[6]	Tertiary care	Georgetown Public Hospital and National Psychiatric Hospital + private hospitals	All major specialists

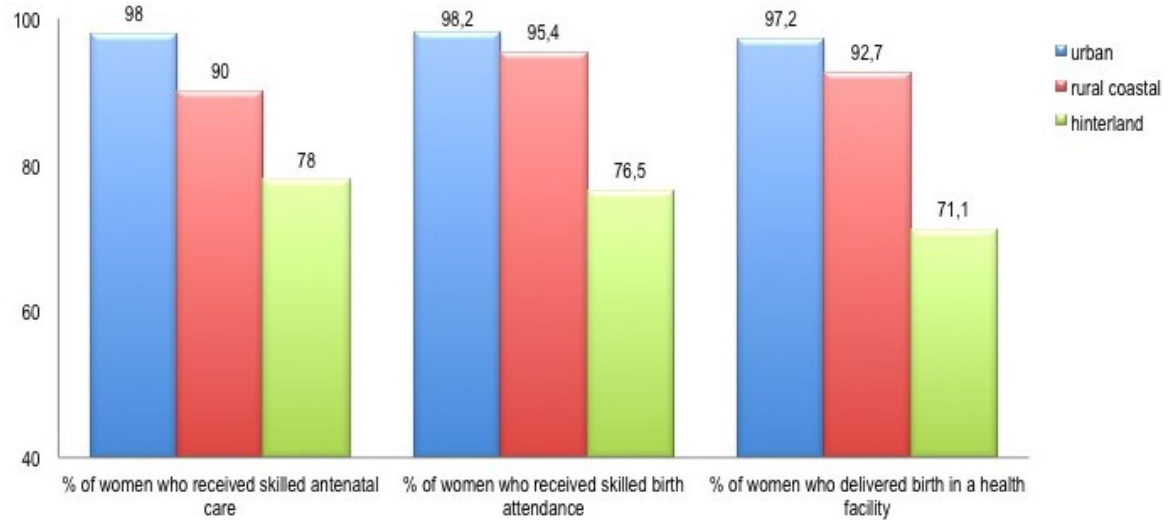
Source: Table by author based on Health facilities listing, Regional Health Services dept., MOH, January 2013

Disparities between populations of different geographic areas

Disparities in access to PHC are influenced by geographic challenges; especially the population in the Hinterland is difficult to reach. Mountainous and riverian villages are sparsely populated, lack often infrastructure such as permanent electricity, the conditions of roads to these villages are usually bad and some of the villages can only be reached by river and air transport. In addition, residency in the Hinterland goes together with unfavourable influences of other social determinants; poverty, lower educational levels, lack of job opportunities, deficiencies in nutrition and health risks arising from environmental factors; malaria being an noticeable example.

Therefore, disparities in access to services as well as in health status based on residency are evident.

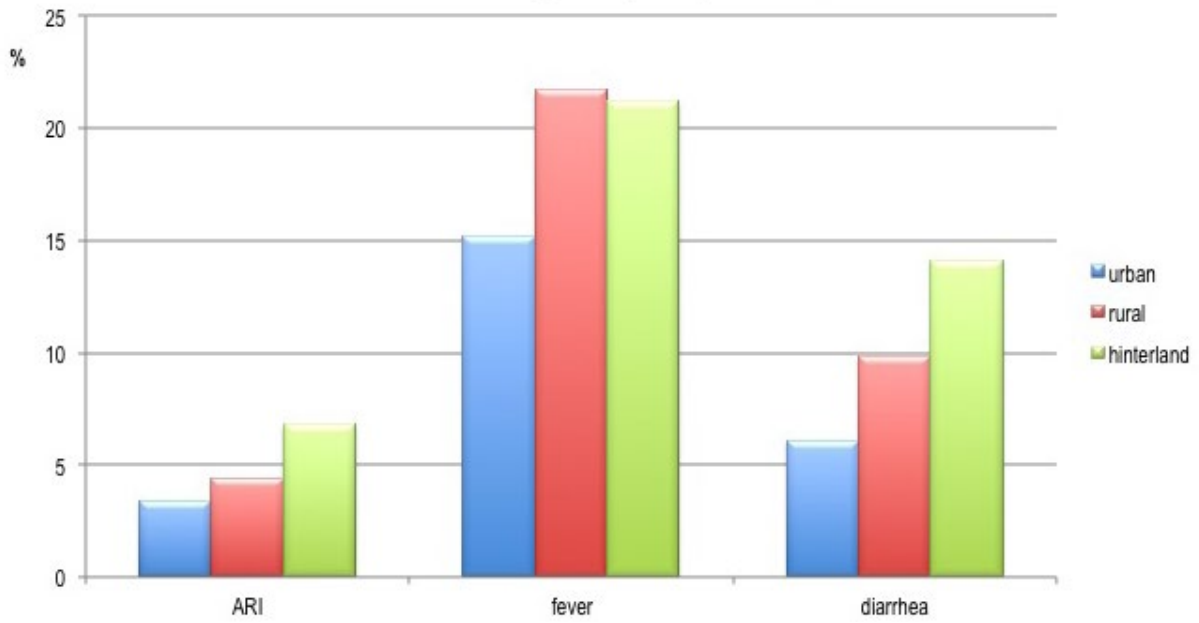
Figure 1: skilled* antenatal care and skilled birth attendance for most recent pregnancy in the past five years preceding the Guyana DHS 2009



[7] Source: Figure based on data of the Guyana DHS-2009, produced by author

6 Six private hospitals are all located in the capital Georgetown.
7 *Skilled defined as: by physician, nurse/midwife, medex, or single trained rural midwife

Figure 2: % of children under-five years of age symptoms by geographic area with ARI, Fever and Diarrhea two weeks preceding the Guyana DHS 2009



Source: Figure based on data of the Guyana DHS-2009, produced by author

There are indications that treatment (from a health facility or formal healthcare provider) for the three childhood illnesses is sought more often in the hinterland than in the coastal areas. The numbers are too small to draw definite conclusions. However, the data of the DHS 2009 suggest that in the interior treatment from a health facility was sought for diarrhoea among children under-five years of age in close to 80% of the cases. In more than 70% these children received ORS or ORT as treatment. The survey findings suggest that in the coastal areas treatment and a health facility was sought about 25% less than in the Interior. (Ministry of Health and Guyana Bureau of Statistics DHS, 2009).

This could be an indicator that the numerous health posts staffed by CHWs provide for common childhood illnesses acceptable services.

COORDINATION OF CARE AND INTEGRATION OF PHC IN THE SERVICE NETWORK

Levels of care and networks

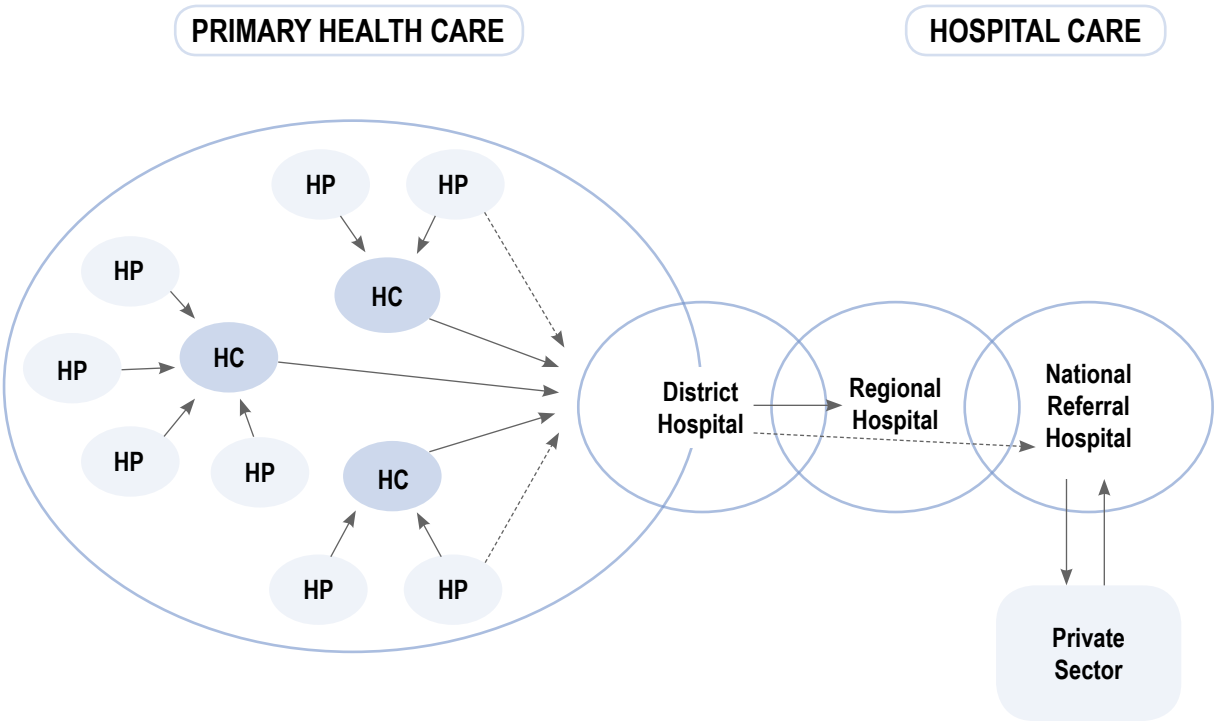
The Guyana service delivery system is organized in five levels of care. Level one up till level four form a service network at the level of the administrative regions. There are 10 regional service networks in each of the 10 administrative regions of the country. Healthcare level 5 has national level facilities (the Georgetown Public Hospital and the Psychiatric Hospital) and serves as referral nation-wide offering tertiary care as well as secondary care.

Comprehensive PHC services are offered at care level 1 and 2. These levels have the most numerous and most accessible facilities (table 3). The roles of these levels are firstly, offering the majority of healthcare services from the healthcare service package and secondly, facilitating referrals to higher levels of care where needed.

Referral system

The system prescribes that referrals should go from one level to the next level and that counter referral should take place accompanied by the necessary information on diagnosis and treatment.

Figure 3: Referral system from Health Posts (HP) and Health Centers (HC) to Hospital care, Guyana



Source: Ministry of Health

In emergency cases a lower level often by-passes the next level and refer directly to, for example, the regional hospital. This is done on practical grounds and takes often place after consultation with the next referral level.

In addition, patients decide frequently to by-pass lower levels of facilities to seek care at the regional hospitals or the national hospital that are perceived as providing higher quality of care. The Ministry of Health identifies this as a challenge to equity and efficiency. Bypassing occurs mostly in the populated urban areas where the additional costs of travel are minimal and less in the rural areas where travel costs to reach a higher level of care are substantial. Therefore, the CMO concludes that since rural populations lack the opportunity to make this choice, this adds to inequity in access to care. According to the CMO it results also in inefficiency, because the clinics at hospitals are overcrowded, while the PHC facilities at community level are sometimes underutilized. (Persaud Shamdeo, Chief Medical Officer Guyana, 2011). In daily practice every patient seeking care at any facility in the public system is accepted and will receive care.

Since the majority of Indigenous villages are small, isolated and in geographic challenging environments the Ministry of Amerindian Affairs plays a vital facilitating role in the referral of individuals from the remote villages to Georgetown. Through the department of Health and Welfare this ministry coordinates with the Ministry of Health and provides housing in Georgetown (Amerindian hostel) for patients and organizes return transport to villages after patients received in- and outpatient specialist healthcare in the Georgetown Public Hospital.

In recent years at least three initiatives have been taken to improve access to specialist care and reduce the load of referrals to the Georgetown Public Hospital. This hospital serves nation-wide as the tertiary referral hospital, but is at the same time the public hospital for region 4 offering secondary care to the population of region 4. This region does not have a regional hospital.

Expanding outreach to remote populations in the Hinterland. Mobile teams for provision of services to remote areas are organized by the Regional Health Services department. Visits to remote areas with skilled staff were already incorporated in the system. However, in recent years visiting teams are now offering specialist care often in coordination with the Georgetown Public Hospital. A first objective is improving access to specialized care by bringing the specialist to a group of patients instead of having patients travel one by one to seek secondary and tertiary care. A second objective is to reduce the number of emergency evacuation of patients that often involves costly air transportation. Emergency evacuation is often the result of a lack of having a patient diagnosed timely and starting care and treatment as needed. (Source: interview Director of Regional Health Services, Dr. Odwin, 2014)

Opening of Diagnostic and Treatment Centers in the coastal area. Through the enhanced collaboration between Cuba and Guyana (2006) four diagnostic and treatment centers have been opened. These centers are located at densely populated rural and semi-urban areas along the coast and have modern diagnostic equipment (imaging, laboratory and electrocardiogram), an operating room and have the capacity to respond to emergency care and conduct non-complex surgeries.

They have been staffed with physicians and technicians from Cuba from the onset and have over the years gradually been replaced with Cuban trained Guyanese physicians and technicians. Because these centers are well equipped and well-staffed they serve as referral to nearby PHC centers and reduce the referral load to the Georgetown Public Hospital. They are considered level four facilities, providing services comparable to a Regional Hospital.

Strengthening public-private partnerships. Guyana, as a lower middle income country, has limitations in providing high tech tertiary care through the public system.

For tertiary healthcare services beyond the capacity of the Georgetown Public Hospital these services can be obtained from the private sector through the public-private partnership programs. Renal dialysis is an example.

Clinical management strategies

Guyana has introduced standard treatment guidelines specifically for PHC in 2010. (Ministry of Health Guyana, 2010b) The guidelines address about sixty common communicable and non-communicable diseases in detail. The PHC treatment guidelines are complementary to the national guidelines for priority diseases such as malaria, HIV and TB and priority population groups such as pregnant women and children under-five-years of age. The aim of the guidelines is improving quality of services and rational use of medicines.

PHC WORKFORCE

PHC Team: composition and training level

It is through the workforce strategies that PHC has been developed historically and been extended to very remote populations along the rivers and in the Hinterland.

The national staffing standards dictate that a PHC team at the health center level consists of a physician + medex or health visitor[8], dentex or dental assistant, a pharmacy assistant, environmental health assistant (part-time/visiting), nursing assistant, nurse/midwife or rural midwife, lab assistant or multipurpose technician and administrative assistant.

In the most remote villages the team is usually incomplete and therefore the Medex with her/his broad range of multipurpose skills is then the most appropriate healthcare worker to be placed in remote areas.

The development of the category of Medex, together with introducing Community Health Workers, has been a key strategy in expanding access to Primary Health Care services for remote populations.

The Medex is a midlevel healthcare worker and considered to be the backbone of the health system in the remote areas. The Medex program started in 1977 and the Medex act was passed in 1978 regulating the practices of this innovative professional category of healthcare worker.

The original 18 months training program recruited trainees from the nursing pool. The Ministry of Health introduced a new Medex pathway around 30 Years commemoration of the Medex program (2007). In this second stream trainees are recruited from secondary school leavers and follow a 42 months training program. The advantage of the new pathway is that trainees can be recruited from a wider pool and the nursing pool will not be depleted as before. Dr. Ramsaran mentioned as an additional advantage that direct recruitment of trainees from the Hinterland would be facilitated, in the new pathway. This was more difficult in the original program since most individuals with a nursing background came from the coastal belt and not from the remote areas. (Ministry of Health Guyana and PAHO/WHO, 2007)

Almost simultaneous with the introduction of the Medex as a mid-level healthcare worker, Guyana introduced the Community Health Worker (CHW) program. Initially the CHW was a volunteer selected by and from his/her own remote village, shortly trained by the Ministry of Health and working from his/her own home with compensation in kind by the community. The CHW program evolved over time and CHWs are currently fully integrated in the formal health care delivery system as lowest level healthcare worker. CHWs are now trained in a six month program, are all working from a health post and recognized as a position in the Public Service system and integrated in the public salary scale. The training program has been adapted over time to needs and realities of the isolated populations and emphasis is now on including some midwifery skills in the CHW training.

8 The health visitor is a nurse trained in public health

The numerous health posts are staffed by a single community health worker. CHWs are supervised by a Medex, nurse/midwife or a physician who periodically visits the health posts.

Guyana applies the strategy of employing lower skilled PHC workers in several areas of healthcare. In all health occupations different levels of competencies exists and categories of shortly trained PHC workers are introduced into the system as a measure to address the extreme shortages of professional healthcare workers in the public system. The CHW and medex are central in the provision of PHC services.

Box 1: Medex - Community Health Worker team for Comprehensive Primary Health Care in Guyana

Guyana has been at the cradle of the Medex program together with Micronesia, Thailand, Lesotho and Pakistan. These countries offered the field trials of the Medex program in the late Seventies and early Eighties and were followed up by other countries resulting in the implementation in 22 developing countries from all over the world.

The program has offered Guyana a significant workforce for PHC and exceptional approaches to PHC for more than 35 years. The Medex and CHWs formed together a unified system for the remote populations with a strong community development focus beyond medical care.

Medex were trained in health center management, community health needs and actions for social determinants, training and supervision of CHWs, drugs dispensing and in basic and general medical skills. The Medex are all round PHC workers tasked with service provision, health management and training and supervision of the shortly trained CHWs.

The CHWs are trained in a period of six months with a strong focus on prevention and health promotion and first aid. Because they belong to the community as well as to the formal health system, they form a bridge between these two entities. Since the inception of the program their set of skills have been adapted and expanded to emerging needs. A number of CHWs were able to move up at the career ladder from nurse assistant or rural midwife to registered nurse and Medex.

The Medex have high prestige in the Hinterland and have from all categories healthcare workers the longest average years of service in the public system in the country. In the very isolated Indigenous villages they serve as the interface between the village and the national system and 'bigger world'.

The development of the Medex program was coordinated and guided by the Health Manpower Development Staff, John A. Burns School of Medicine, University of Hawaii.

Source: (University of Hawaii, 1983), (Goede, 2006), (Ministry of Health Guyana and PAHO/WHO, 2007), Interview with Chief Medex James 2014

Contracting, recognition and incentives

Workers in the public system are paid a fixed salary as public servants according the Public Service Ministry salary scale scheme for all civil servants. The retirement age for civil servants is 55 years of age.

PHC workers are generally contracted by the region (RDC). However, the majority of Regional Health Officers, who supervise PHC services, are contracted by the Ministry of Health. Therefore, human resources at the regional level are a shared responsibility of the Ministry of Health and the RDC and all fall into the Public Service Ministry system.

There is no national incentive system for retention or for performance of healthcare workers. Housing is provided as an incentive to those serving in rural areas. Regions provide incentives to residents of their region for enrolling in nursing training programs by providing a monthly stipend, covering the admission costs and providing accommodation for those who are enrolled in a school outside their area of residency. Sponsoring of students is also provided by the Georgetown Public Hospital and the private Mercy Hospital who have their own nursing training programs.

There are several awards annually to recognize outstanding workers.

The key underlying factors to retain healthcare workers, specifically nurses, are lack of consideration of authorities for their welfare and lack of involvement in decision-making and of professional recognition, limited career options in the nursing profession and low salaries. (Pan American Health Organization, 2011)

Availability of PHC workers

Guyana has an absolute shortage in all categories of healthcare workers. Additional challenges are the maldistribution of the health human resources, resulting in an urban-rural disparity and the relatively high proportion of shortly trained workers for health service delivery at different levels of care. This is especially apparent in the nursing profession (Ministry of Health, PAHO Joint Project Health Workforce Guyana, 2007)

The MOH has staffing standards for all levels of care. The only category of healthcare worker in the public system without a shortage is the CHW, but some regions do have vacant positions for CHWs.

Table 6: CHW and Medex in direct service provision (level 1-3) by Region, Guyana, 2013

	R 1	R 2	R 3	R 4	R 5	R 6	R 7	R 8	R 9	R 10	Total Coastal Urban	Total Coastal Rural	Total Hinterland	Total
CHW	54	35	34	19	12	15	31	27	54	33	8	140	166	314
Medex[9]	7	6	9	14	6	5	6	3	3	11	17	34	19	70
Population	**26,941**	**46,810**	**107,416**	**313,429**	**49,723**	**109,431**	**20,280**	**10,190**	**24,212**	**39,452**	**191,810**	**535,193**	**81.623**	**747,884**

Source: Based on Regional Health Services Listing of Medex and CHW by region Nov. 2013, table by author

9 An additional 10 Medex are registered in region 4, at various institutions; the Central office of the MOH, the Georgetown Public Hospital, the Palms residence home for the elderly, the prison, malaria program and at Port Health sites. The National Psychiatric Hospital located in region 6 is the workplace for one Medex

Guyana is a country with outward migration of high tertiary educated individuals. Emigration is therefore a major factor in loss of skilled workers, in health workforce shortages and especially the attrition of nurses is a problem. Institutions from the USA travel to Guyana to recruit Guyanese nurses actively. But, nurses are also leaving the services without migrating to other countries.

In the mid-Twenties it was observed that more nurses were leaving than entering the health system. The registered nurse/midwife had the highest attrition rate with a net loss that could have left the system in a few years with no professional nurses and professional midwives if the trend would continue. (Ministry of Health, PAHO Joint Project Health Workforce Guyana, 2007)The nurse assistant was the only category with net gains due to the high intake in the short training programs. A survey on midwifery in Guyana showed that the attrition rate of post basic midwives (registered nurse/midwives) was in excess of 70% in the 15 years period; 1993-2008. (Gordon, 2009)

The Ministry of Health multiplied from 2007 the intake of students in the nursing programs drastically.

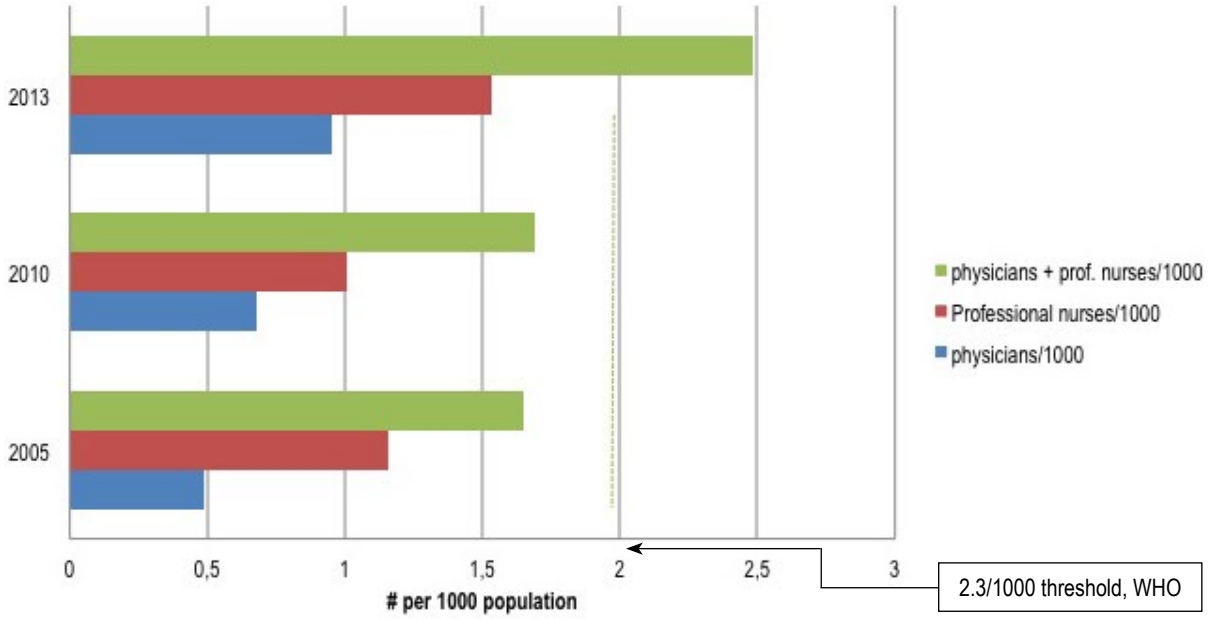
The average length of services of healthcare workers in the public system is short and varies across the regions and across the professional categories. The Medex has the longest average length of service nation-wide (17 years). (Ministry of Health, PAHO Joint Project Health Workforce Guyana, 2007)

In 2006 the presidents of Guyana and Cuba closed an agreement on strengthening healthcare in Guyana. Subsequently a large group of 500 Guyanese students were accepted in the Latin American School of Medicine in Cuba. This number is significant given the total population of less than one million in Guyana. The agreement included also establishing four diagnostic and treatment centers in coastal rural areas that would be fully staffed by Cuban physicians and technical staff who would be gradually withdrawn as the Guyanese students graduated and returned home. The centers will serve as referral for the PHC facilities. Physicians are bound by contract to serve five years in the public sector, especially in underserved areas. Other disciplines will serve 2 to 3 years.

Due to the high number of Guyanese enrolled in the *Latin American School of Medicine* in Cuba, shortages of physicians have steadily been reduced in recent times. In 2013 for example, 278 physicians trained in Cuba returned to Guyana. In 2013 there are 0.95 physicians per 1000 people in Guyana. The absolute minimum threshold of professional healthcare workers is set by WHO at 2.3 per 1000 people in order to be able to provide essential services. (WHO, 2007)

The figure below shows that Guyana only recently meets this minimum requirement for service provision. This is due to the return of Guyanese physicians trained in Cuba. However, it should be noted that in earlier periods Guyana has intercepted the shortages of professional healthcare workers with shifting tasks to shortly trained assistant level healthcare workers.

Figure 4: Ratio of physicians and nurses per 1000 population Guyana



Source: Figure produced by author based on Budget speeches Min. of Finance

Availability of physicians, nurses and midwives has been changed drastically and a full update of the distribution across the levels is not readily available. However, in 2008 33.4% of the 491 midwives (registered nurse/midwife and rural single trained midwife) where working in PHC. (Gordon, 2009) The vast majority is working in the hospitals and a small proportion is teaching and in administration.

Training

Training programs are developed and executed by:

1. **the Division of Health Science Education of the Ministry of Health:**
    a. Community Health Worker
    b. Medex, old pathway and new pathway
    c. Nurse, and nurse assistant,
    d. Post basic midwife (Nurse/Midwife),
    e. Singled trained rural Midwife
    f. Pharmacy assistant
    g. Environmental health assistant,
    h. Dentex
    i. Dental assistant
    j. Rehabilitation assistant
    k. Audiological practitioner
    l. Medical Laboratory Practitioner
    m. Multipurpose technician

Note: the nursing programs of Health Science Education division of the MOH are implemented at three regional Schools of Nursing connected to the regional hospitals in region 3, 6 and 10.

2. **the University of Guyana offering bachelor level programs:**
    a. Bsc in pharmacy
    b. Bsc in Nursing
    c. Bsc in Optometry
    d. Bsc in Rehabilitation Sciences
    e. Bsc in Medical Technology
    f. Medicine
    g. Associate degree in Environmental Health
    h. Associate degree in Optometry

3. **the Georgetown Public Hospital.** The training programs executed by the Georgetown Public Hospital are primarily meant for its own workforce.

4. **Private Institutions.**
    a. The Mercy Hospital Nursing School
    b. The Davis Memorial Hospital Nursing Program.

The advantage of the training programs administered by the Ministry of Health's own Health Science Education division is the flexibility to adapt programs and trainee recruitment according needs. For example, enrolment of students from underserved regions is often favoured and regions can request a certain number of places to be reserved upfront. In addition, healthcare workers are bound by contract to serve a number of years in the public service system depending on the length of the training followed. For professional nurses this is 5 years.

Continuing Medical Education is a requirement for physicians to renew her/his registration each year. Nurses renew registration every two years. Registration of professionals takes place with the accrediting bodies. These are the Medical Council, Nursing Council Dental Council, the Medex Board and for technicians the Allied Health Professions Council. Around the commemoration of 30 years medex (2007) continuing medical education was introduced for the Medex.

SOCIAL PARTICIPATION, INTERSECTORAL COLLABORATION, AND INTER-CULTURALITY IN PHC

Social Participation

Social participation of stakeholders and communities is a legal obligation and enshrined in the constitution of Guyana.

Local government authorities are obliged holding local meetings regularly and this serves to involve communities in assessing needs and decision-making in health development and service delivery. Neighbourhood councils and Village councils provide official structures for social participation of citizens (Government of Guyana, 1998)

The Regional Health Authority (RHA) of region 6 has established Health Management Committees. These committees facilitate the interaction between representatives of the communities and the health service facilities and health staff. Health center days are organized and a system of complaints of patients and communities is in place. (Health Systems 20/20 and the Guyana Ministry of Health, 2011)

In the area of health Guyana has a few patient associations and a larger number of NGOs working actively in the area of HIV. Extensive external funding was available for NGO activities in the area of HIV prevention and care. This included World Bank grants for community based HIV prevention and funds from bilateral agencies such as Pepfar and USAID, CIDA as well from UN agencies; UNAIDS, Unicef. As a result the majority of community involvement in health was disease specific and focusing on HIV.

The Community Based Rehabilitation (CBR) NGO is active in several communities and has been able to involve community actors in the area of disabilities as well as empowering persons with disabilities and their families. A review of CBR programmes in 22 countries found that Guyana was among the outstanding countries generating positive results at the individual, family and community level. (Sharma, 2007) Though focusing on a specific health problem, CBR is well integrated in PHC through their connections with and support from the rehabilitation assistants on the PHC teams of health centers across rural and hinterland settings. (Source: authors interviews with rehab staff).

Intersectoral collaboration

Intersectoral collaboration to address social determinants is a key area in the new health strategy of the Ministry of Health; Health Vision 2020.

The decentralized structure in Guyana has the ability to link different sectors at regional and sub-regional level. Intersectoral collaboration is facilitated through the Regional Democratic Council who manages development and social services in the region.

Interculturality

PHC is, apart from embedded within the Regional Democratic framework, also operating within the context of the Amerindian Affairs.

The Ministry of Amerindian Affairs has several mechanisms and structures to protect the Indigenous cultures and involve the populations in the Hinterland villages in development areas. The Amerindian Act was passed in 2006 and established a national Council of Toshoas. All 200 Amerindian villages do have a Toshoa, who is the chosen chief of the village. The Amerindian act provides for consultation of all Amerindian villages in national decision-making that might influence status and life of the Indigenous peoples. It also regulates the tasks and responsibilities of the Toshoas and councilors who are part of the village governance structure. The focus is primarily on land rights, but includes also the protection of Indigenous culture and heritage, the promotion of the use of Indigenous languages and developing strategies to reduce poverty and improve access to education and health services. (Government of Guyana, 2006).

CONCLUDING REMARKS

Guyana has applied a consistent PHC strategy since the country commenced with its PHC strategy in 1977, shortly before the Alma Ata International PHC Conference. It is characterized by a decentralized system, where PHC is embedded in a district health system model and integrated service network based on the ten administrative regions. The PHC model in Guyana is predominantly public and free to all. The private sector plays only a role in urban towns; mostly in the capital and its outskirts.

In the past 8 years ordering of PHC has been improved by a number of initiatives from the Ministry of Health: the introduction of the Package of Publicly Guaranteed Health Services, the Standard Treatment Guidelines for PHC and the Gap analysis of the workforce for implementing the service package. These three initiatives present the requirements for the services at each level, the human resources needs (and gaps), the equipment and other technical devices, the essential medicines for each level, and a comprehensive set of preventive, promotive, curative, and rehabilitation services within PHC.

Guyana has therefore a solid concept and policy- and organizational frame for PHC. However, there remains a serious gap with health outcomes of the population. Guyana is still among the poorest countries in the Western hemisphere and scores low on health indicators in comparison with the average scores in the Americas.

Many challenges are present in the context of Guyana that need to be addressed before its well-designed integrated PHC system may impact on health of the people.

The workforce shortages are serious with the country just very recently meeting the absolute minimum requirements of 2.3 per 1000 people ratio of professional healthcare workers. This however, is at national level and the ratio in the Hinterland is lower. The return of large numbers of Cuban trained Guyanese doctors in the past two years has contributed to the improved availability of professionals. The nursing ratio has showed a more limited improvement despite the increased intake of students in the nursing schools. Given the global shortage of nurses and the trend of outward migration of the Guyana population, improving nursing graduation rates and retention has the attention of the Ministry of Health. This will also be important to ensure gains from increased availability of physicians. For referrals to quality hospital care the numbers of nurses are directly related to health outcomes in hospitals and the availability of both doctors and nurses will need to increase.

In view of the realities of the Hinterland; remote and extremely low population density, challenging geography of the Amazon region, underdevelopment and excess poverty and disparities in health outcomes, the conclusion is that Guyana has huge challenges to overcome in meeting needs with a qualified workforce. Since it will be difficult to have an entire team serving a very small village on a permanent base, it remains important to have all-round healthworkers that can respond to the broad range of tasks from health promotion to treatment and care of common illnesses.

In this regard the Medex might have some advantages above a physician for working in the Hinterland. This is because the Medex has received a strong skill based- and problem solving based training and is trained in the supervision and on the job training of CHWs who are staffing the numerous health posts in the Hinterland.

Guyana will have the challenge to consider thoughtfully the management, distribution and retention of its human resources now that the health system seems to be climbing out of a deep through and is expecting an influx of physicians in the coming years.

It also involves considering what should be renewed in PHC and what should be kept and protected from PHC practices and structures established in previous times of extreme health workforce scarcity.

Guyana makes an interesting case to be followed in this transition stage.

REFERENCES

Guyana Bureau of Statistics - Census 2012. (2014b). *Guyana Population & Housing Census 2012 preliminary report.*

Bureau of Statistics Guyana. (2014). Retrieved 2014, from www.statisticsguyana.gov.gy.

Bureau of Statistics Guyana. (2014). *Guyana Population & Housing Census 2012 preliminary report.*

Docquier, F., & Marfouk, A. (2005). *International Migration by Educational Attainment (1990−2000).* Washington D.C.: World Bank release 1.1.

Goede, H. (2006). Diversification of the Health Workforce: Strategies for Widening Access to Care: Experiences from Guyana. *PAHO Symposium at the Global Health Council Annual Conference, 30 May 2006 "Diversification of the Health Workforce: Strategies for Widening Access to Care".* Washington D.C.: Pan American Health Organization.

Gordon, S. (2009). *Final Report on the assessment of midwives in Guyana.* Georgetown.

Government of Guyana. (1988). *Municipal and District Councils Act.*

Government of Guyana. (1998). *Local Government Act.*

Government of Guyana. (2005a). *Ministry of Health Act 2005.*

Government of Guyana. (2005b). *Regional Health Authority Act 2005.*

Government of Guyana. (2006). *Amerindian Act.* Georgetown.

Government of Guyana. (2007). *Health Facilities Licensing Act.*

Guyana Bureau of Statistics . (2014). Retrieved 2014a, from www.statisticsguyana.gov.gy.

Guyana Doctors Practicing Aboard. (2014). Retrieved 2014, from www.guyanadoctor.com.

Health Systems 20/20 and the Guyana Ministry of Health. (2011). *Guyana Health System Assessment 2010.* Bethesda, MD: Health Systems 20/20, Abt Associates Inc.

International Monitary Fund. (2014). Retrieved 2014, from www.imf.org/external/np/sec/pr/2013/pr13534.htm.

Ministry of Finance Guyana. (2010). *Budget Speech.*

Ministry of Finance Guyana. (2013). *Budget Speech.*

Ministry of Health. (2013a). *List of number of Medex and Community Healthworkers by region .*

Ministry of Health. (2014). *List of health facilities by region update February 2014.*

Ministry of Health and Guyana Bureau of Statistics DHS. (2009). *Guyana Demographic and Health Survey.* Georgetown.

Ministry of Health and Pan American Health Organization. (2010). *Implementing Guyana's Package of Publicly Guaranteed Health Services (PPGHS): Bridging Health Human Resources Gaps.*

Ministry of Health Guyana. (2005). *Statiistical Bulletin 2005.*

Ministry of Health Guyana. (2008). National Health Strategy 2008-2012. Georgetown, Guyana.

Ministry of Health Guyana. (2010a). *Package of Publicly Guaranteed Health Services in Guyana.*

Ministry of Health Guyana. (2010b). *Standard Treatment Guidelines for Primary Health Care.* Georgetown.

Ministry of Health Guyana. (2013b). *Health Vision 2020: A National Health Strategy for Guyana, 2013-2020.*

Ministry of Health Guyana and PAHO/WHO. (2007). Message from the Minister within the Ministry, Dr. Bheri Ramsaran at Conference: Reflecting on 30 Years of Experience with the Medex.

Ministry of Health, PAHO Joint Project Health Workforce Guyana. (2007). *Profile of the Health Workforce in Guyana.*

National Insurance Scheme Guyana. (2014). Retrieved 2014, from www.nis.org.gy.

Pan American Health Organization. (2011). Nurse Migration in Guyana. *Series Human Resources for Health no 64*.

Pan American Health Organization, Core Health Data website. (n.d.). Retrieved 2014, from Regional Core Health Data Initiative: http://www1.paho.org/english/sha/coredata/tabulator/newtabulator.htm

Persaud Shamdeo, Chief Medical Officer Guyana. (2011). *The Annual Health Report 2010.* Ministry of Health Guyana.

Sharma, M. (2007). Community Participation in Community Based Rehabilitation Programmes. *Asia Pacific Disability Rehabilitation Journal*, vol 18, no. 2; 146-157.

University of Hawaii. (1983). Midlevel healthcare worker training materials and Community healthworker training materials. In *The Medex Primary Health Care Series* (pp. 21-33). Honolulu: Health Manpower Development Staff, John A. Burns School of Medicine, University of Hawaii, USA.

Woolford, Janice MCH Director . (2012). *Maternal and Child Health/Family Health Report Guyana 2012.* Ministry of Health Guyana.

World Bank. (2014). *www.data.worldbank.org*

World Bank. (n.d.). *Net Migration*. Retrieved 2014, from www.data/worldbank.org

World Health Organization. (2014a). Retrieved 2014, from apps.who.int/nha/databse.

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List of persons met	
Name	**Designation**
Dr. Bheri Ramsaran	Minister of Health
Dr. Shamdeo Persaud	Chief Medical Officer
Mr. Cadogan	Permanent Secretary of Health
Dr. Morris Edwards	Head Statistics unit
Ms. Karen Yaw	Director of Planning dept.
Ms. Gina Arjoon	Health economist, Planning Dept.
Mr. Baldeo James	Chief Medex, Regional Health Services Dept.
Ms. Tarramattie Barker	Chief Nursing Officer
Dr. Janice Woolford	Head MHC sub-program
Dr. Monica Odwin	Director Regional Health Services
Mr. Wilton Benn	Director Health Science Education dept.
Ms. Alana Dey, economist	Employee Statistics unit (resp. for PHC data)
Ms, Florine Baggot, CHW	Radio operator Regional Health Services dept.
Dr. Malhi Cho	HSS advisor PAHO/WHO

Persons met at Region 10	
Dr. Varouk Riyasat (obstetrician)	CEO, superintendent McKenzie Regional Hospital, region 10
Dr. Pansy Armstrong (general physician)	RHO + secretary of the Regional Health Committee region 10
Mr. Mortimer Mingo	Chair of the Linden Hospital Complex management board
Mr. Maurice Butters	Chairman Regional Health Committee region 10, member of the Linden Hospital Complex board
Ms. Gloria Garraway (physiotherapist)	Head Rehab department McKenzie Regional Hospital
Ms. Pamela Williams	CHW at West Watooka Health Post
Florence Gray	Health Visitor, RN/RM at 1 Mile Health Care Center
Ms. Persaud	Matron at Upper West Demerara District Hospital

ACRONYMS

ARI	Acute Respiratory Illnesses
CBR	Community Based Rehabilitation
CHW	Community Health Worker
CIDA	Canadian International Development Agency
CMO	Chief Medical Officer
DHS	Demographic Health Survey
EPI	Expanded Program of Immunization
GAVI	Global Alliance for Vaccine Initiative
GDP	Gross Domestic Product
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
HC	Health Centers
HIPC	Heavily Indebted Poor Country
HP	Health Post
IADB	Inter-American Development Bank
ISAGS	Instituto Suramericano de Gobierno en Salud (South American Institute of Governance in Health)
MDG	Millennium Development Goal
MOH	Ministry of Health
N.A.	Not available
NGO	Non-Governmental Organization
NIS	National Insurance Scheme
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
Pepfar	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PPGHS	Publicly Guaranteed Health Services
RDC	Regional Democratic Council
REO	Regional Executive Officer
RHA	Regional Health Authority
RHC	Regional Health Committee
RHO	Regional Health Officer
UN	United Nations
UNASUR	Unión de Naciones Suramericanas (Union of South American Nations)
UNDP	United Nations Development Fund
UNFPA	United Nations Population Fund
Unicef	United Nations Children's Fund
USAID	US Agency for International Development
WHO	World Health Organization

TABLE OF FIGURES

ANNEX

Annex 1: Demographic s and Socio-economic indicators, Guyana, 2012

Table 7: Demographics and socio-economic indicators, Guyana, 2012

Indicator	2012
Total population (mid-year)	748,900
Proportion of urban population	26.4%
Proportion of population under – 15 years of age	N.A. for 2012 (2002: 36%)
Proportion of population over 60 years of age	N.A. for 2012 (2002: 6.2 %)
Fertility rate	2.59
Life expectancy at birth	70.2 F: 74.1 M: 67.2
Literacy rate	91.8%
GDP per capita in US$	3,387
Human Development Index	0.636
Gini index	51.6
Public expenditure on health as % of national budget	8.9
Proportion of the population with access to improved potable water supply	94.5 (2011)
Proportion of the population with access to improved sanitation	93.9 (2011)

Source: (Guyana Bureau of Statistics - Census 2012, 2014b) (Ministry of Health and Guyana Bureau of Statistics DHS, 2009)

Annex 2: Selected Health Indicators, Guyana, 2000, 2005, 2010 and latest

Table 8: Selected mortality and coverage rates by year, Guyana

Indicator	2000	2005	2010	Latest
MORTALITY RATES				
Infant mortality rate/1000 live births	Rep.: 21.9 Est.: 39.0	Rep: 22.0 Est.: 34.0	Rep.: 14.7 Est.: 30.0	Rep.: 12.9 (2013)
Under-5 mortality rate	Est.: 49	Rep.: 26.5 Est.: 47	Rep.: 22.0 Est.: 37.0	Rep.: 15.8 (2012) Est.: 35 (2012)
Ratio of maternal mortality/100,000 live births	Rep.: 133	Rep.: 148	Rep.: 123 (2009)	N.A.
Annual proportion of registered deaths of under-5 children due to intestinal communicable diseases	N.A.	9.9	8.7	N.A.
COVERAGE RATES				
Indicator	2000	2005	2010	2013
Proportion of population under -1 immunized with the third dose of tetravalent vaccine	Est.: 88.0	Est.: 92.0	96.8 Est.: 95.0	98.0
Proportion of pregnant women seen seven times or more by trained personnel during pregnancy	N.A.	N.A.	N.A.	N.A. (79% at least 4 visits in 2009)
Proportion of deliveries by skilled birth attendants	90.3%	94%	99.0%	N.A:

Source: (Ministry of Health and Guyana Bureau of Statistics DHS, 2009) (Guyana Bureau of Statistics , 2014) (Ministry of Finance Guyana, 2013) (Ministry of Health Guyana, 2005) (Pan American Health Organization, Core Health Data website) (Persaud Shamdeo, Chief Medical Officer Guyana, 2011)

Annex 3: Human Resources and Facility capacity, Guyana

Table 9: Human Resources for Health numbers and ratio by year, Guyana

Indicator	2000	2005	2010	2013
Ratio physicians/1000 population	0.38	0.49	0.69	0.95
Number and ratio of general - or family physicians/1000 population	N.A.	N.A.	N.A.	N.A.
Ratio nurses and midwives/1000 population	N.A.	1.16	1.01	1.53
Ratio of dentists/1000	N.A.	N.A.	0.045 With incl. of Dentex: 0.11	N.A.
Ratio and number of community healthworkers/1000	N.A.	N.A.	0.32	0.42

Sources: (Ministry of Health Guyana, 2005) (Ministry of Health, 2013a) (Ministry of Health, PAHO Joint Project Health Workforce Guyana, 2007) (Bureau of Statistics Guyana, 2014) (Pan American Health Organization, Core Health Data website) (Persaud Shamdeo, Chief Medical Officer Guyana, 2011)

Table 10: Number and ratio of PHC facilities/1000 population coastal, hinterland and national, Guyana

PHC Facilities	National		Coastal regions (2, 3, 4, 5, 6, 10)		Hinterland regions (1, 7, 8, 9)	
	2005	2014	2005	2014	2005	2014
Health Posts	194	201	72	65	122	136
Healthcare Centers	116	220	103	208[10]	13	12
Total number (health centers + health posts)	310	421	175	273	135	148
Ratio of PHC facilities/1000[11]	0.41 (P:751,223)	0.56 (P: 748,900)	0.25 (P: 90.5%)	0.41 (P: 89.1%)	1.89 (P: 9.5%)	1.81[12] (P: 10.9%)

Sources: (Ministry of Health Guyana, 2005) (Ministry of Health, 2014), ratio calculated by author

10 Nine private and company healthcare centers not included, because this info was not available for 2005.
11 Based on population from census 2002 and 2012
12 Ratio has decreased due to the population growth of the Hinterland population, despite the expansion of facilities.

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