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# Improving public health care: an examination of the nature of Cuban government assistance to the Ghanaian public health care system

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**Improving public health care: an examination of the nature of Cuban government  
assistance to the Ghanaian public health care system**

by

**Isaac Zvi Christiansen**

A thesis submitted to the graduate faculty in partial  
fulfillment of the graduate requirements for the degree of  
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Major: Sociology

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This work is dedicated to my daughter, Kayla Salimata Christiansen who I love so very much.

It is also dedicated to the people of Ghana, The Gambia, Cuba, and all who struggle to make this world a better place in one way or another.

## **Abstract**

This research examines the process (and impact) of foreign technical assistance to government primary health care systems in developing countries in terms of enhancing accessibility, program effectiveness, and sustainability. The research describes how the African and Cuban health care systems work to meet the needs of their underserved, primarily rural populations, how these populations' access to health care services are addressed, and how the Cuban assistance affects the ability of nations in the Global South to achieve their goals of providing quality health care for their populations. More specifically, the research examines the Cuban government's multi-faceted assistance to primary health care systems in sub-Saharan Africa. This research examines the experiences of the Cuban Medical Brigade in Ghana in terms of their approach to addressing issues of accessibility and capacity building as indicators of program appropriateness.

## Chapter 1: Introduction

Populations of developing nations, especially those in rural areas, suffer from disparities in accessing health care due to isolation and poverty, which impacts negatively the wellbeing of the populace (Braverman and Tarimo 2002). Disparities in access to health care reflect the high cost of rural clinics and medical personnel to staff them and deep economic and social inequalities. How can foreign technical assistance to developing nations enhance accessibility to health care for their populations in a sustainable manner? What is the role of Cuba's Integrated Health Care Program in the global struggle for health?

Within the Global South, many nations face staggering challenges in overcoming poverty and economic disparities. With inadequate resources and infrastructure available to sub-Saharan African nations and the Global South, innovative methods for providing health care have taken center stage. At the International Conference on Primary Health Care, the Declaration of Alma Ata in 1978 asserted that health care is a human right. It stressed concern about global economic disparities and the effects on health care of the world's populations. The conference also developed a comprehensive definition of primary health care and asserted people's rights to collective planning and implementation of health care (Alma Ata 1978). The principles exalted at Alma Ata were reinforced again in the People's Health Assembly in Dhaka, Bangladesh in December 2000.

Macfarlane et al. (2000) documented that since Alma Ata several initiatives have been contrary to the declaration's principles. These include the 1980 economic structural adjustment program initiated by the World Bank concerned primarily with 'cost recovery and financial stability' and privatization which have generally undermined community-based health care programs (ibid.). Structural adjustment programs were imposed upon nations throughout sub-Saharan Africa through the 1980s and 1990s, and forced governments to divert spending away from health care and other social programs that could benefit those trapped in penury, towards paying off national debt (ibid; Schoepf, Schoepf and Millen 2000).

The focus of the World Bank and International Monetary Fund (IMF) has been to shift financing of health care to the private sector as well as pushing for privatized education and water supply (Bretton Woods Project 2009; Schoepf et al. 2000). This means that the ultimate goal that the IFIs have for the provision of health care in the Global South is to transform it to a for profit venture and to free up of government funds to help the indebted nations meet payments to IFIs. Unfortunately, impoverished people make poor customers. Many economies across the Global South can be classified as disarticulated, lacking forward and backward industrial linkages that could potentially lead to more development (Jaffee 1998). In the context of poverty that is prevalent in the Global South, the need for health care is not backed by an ability to pay, that translates into a lack of effective demand, and the inability of private enterprise to resolve this problem. Poor people rely primarily on the public sector for health care provision (Fields 2006). In the Global South and particularly in sub-Saharan Africa, these policies have exacerbated population health problems over the past twenty years, particularly for the most disadvantaged (Schoepf et al. 2000).

Schoepf et al. (2000) documents the impact of SAPs on the people of Ivory Coast and the Democratic Republic of the Congo (DRC). One poignant example is that of a mother from Kinshasa, named Nsanga. Her case provides an example of the challenges faced by many residents that were affected by the neo-liberal initiative. Nsanga lived among unsanitary conditions with inadequate latrines in a neighborhood where malaria and malnutrition were common. She gave birth at home due to the inability to cover the user fees. Her husband was among 80,000 people who lost their jobs when the government of Congo tried to reduce its expenditure on health care and education. Due to these hardships and paucity of opportunities, she was forced into prostitution, contracted HIV and died of AIDS in 1991.

Bond and Dor (2003) documented the effects of programs that have promoted neo-liberal economic and health care policies on the health sector in Africa such as the Structural Adjustment Programs (SAP) Poverty Reduction Strategy Papers (PRSP) and Highly Indebted Poor Countries (HIPC) initiatives for debt relief. They found that the PRSP and HIPC programs had not reversed the policies of SAPs on health care systems in poorer nations, such as user fees to access health services that led to underutilization of health care services. Unfortunately, while

there are some improvements compared with SAPs, the PRSP programs have not done enough to address systematic issues that are both linked to poverty and public health.

The World Health Organization (WHO) recommends having at least one doctor per 5,000 people (Schrecker and Labonte 2004). The demand for health care professionals is increasing globally, but the need is exceptionally acute in the Global South, particularly through southeast Asia and Africa (WHO 2006). Current health resources, both human and material, are unequally distributed between nations. Twenty-two nations in sub-Saharan Africa have less than one doctor per 10,000 people, with only 11 having two or more per 10,000; of those, three are smaller island nations - Seychelles, Mauritius and São Tomé and Príncipe (UN 2008). As of 2006, roughly 23% of the doctors and 5% of nurses working in the mostly wealthy (OECD) nations were from the Global South. According to the WHO (2006) World Health Report “Working Together for Health”, while the region of the Americas has ten percent of the ‘global burden of disease’ it has half of the world’s health financing and 37% of the global health workforce. Meanwhile, Africa endures 34% of the world’s share of disease but has only 3% of the world’s health workforce and 1% of global health financing. In sum, the nations across the Global South have a greater share of the overall disease burden but significantly fewer resources with which to confront it.

*National and International Approaches to Addressing Health Care Crises in the Global South*

So, what is to be done? There are ways to transform this negative panorama. “There are many examples of how inaccessible populations have empowered themselves, bringing about substantial changes in their communities” (Mcfarlane et al. 2000:5). One component of an international environment that leads to good public health systems is that it encourages local empowerment, with community members becoming educated about their own health care and taking charge of decisions about their health. Optimally this occurs within a framework that puts communities at the center of management - with all other stakeholders helping to make decisions in a participatory manner - not imposed from above (ibid).

The principles and energy of Alma-Ata can be retrieved by providing the vehicle for people to speak for themselves and to be heard; for this to happen, there needs to be a worldwide intersectoral commitment that enables people to organize freely around their interests and to support their health initiatives. These exhortations acknowledge that health is a multisectoral and political issue both in terms of resource allocation and of human rights (ibid: 11).

The argument that is continually uttered by the private sector's most ardent advocates is that public, government and socialized health care is inefficient, and ineffective at providing care. They further argue that it eliminates the patient's freedom of choice. However, these positions are undermined by research that documents how privatization has exacerbated health problems in economically poorer nations. The anti-public sector argument is further undermined by the fact that Cuba, as a country pursuing a path of socialist development, has not only provided quality health care to its people as evidenced by low infant and child mortality, high longevity, and universal access to primary through tertiary health care, but has also been able to deliver health care to the poor far beyond their borders.

One national approach involves following a Primary Health Care (PHC) model. PHC developed as a method of providing impoverished rural populations with health services. In many nations, health care budgets are directed primarily to urban tertiary health care institutions, leaving insufficient funds for rural health care. PHC, when adequately funded and sufficiently resourced, is linked to lower infant mortality, as shown by research comparing PHC villages with non-PHC villages in the Gambia (Hall and Taylor 2003). However, as the incentive to reduce costs grew, PHC has gradually given way to Selective Primary Health Care, to preserve only its most effective components.

Hill et al (2000) found that declines in infant mortality rates were more significant in the PHC villages over the first four periods of the study (1982-1993), with no differences between PHC and non-PHC villages in the final year. Regarding under-five mortality, PHC villages had lower rates in the third and fourth periods, with the difference disappearing in the final period. Importantly, foreign aid and other support for primary health care was reduced during the fifth and final period under review. PHC villages received more attention and funding when the local economy was more robust, with the health of residents of PHC villages superiority to that of residents in non-PHC villages. Hill et al. (2000:116) acknowledged the value of improved transportation and infrastructure for basic health services, but stressed that improvements were primarily due to the work of the village health workers and community health nurses and "easier access to some basic treatment at the village level."

Other approaches that may be pursued on a national or local level include reduction or abolition of user fees, incentives to personnel to work in underserved areas, training more physicians, nurses and community health workers from deprived areas, as well as allocating more government funds to rural development and health care. National and local efforts to reduce obstacles to accessing health care services, and training and retaining a strong health care workforce are essential to having a sustainable and effective national health care system. Without these developments, it is unlikely that even the best international assistance programs will be able to sustain a recipient health care program indefinitely.<sup>1</sup> Further examples of national health care approaches will be examined with the cases of the Cuban and Ghanaian health care systems in Chapters 3 and 4.

International assistance may be in the form of sending health personnel as in the case of Cuba's aid that is the focus of this thesis, or in the form of financial assistance. Much of the financial assistance offered developing nations by the US (72% in 2003) is tied, requiring that the recipient buy US products and favor investment by US companies leading to cycles of dependency and mal-development (Parenti 2008; OECD 2003). In combination with IMF and World Bank structural adjustment conditions, those practices often undermine national health care systems.

However, there are numerous NGOs and missionary groups, in addition to aid from nation states to health care systems of the Global South, all varying by size, scope and focus. NGOs, such as Doctors Without Borders, send in medical teams in response to natural disasters and epidemics, and to assist local health systems when they are overwhelmed (Doctors Without Borders 2009). Another NGO, Medicine for Mali, makes regular visits to villages in Mali providing care, building clean water wells as well as providing microfinance (Medicine for Mali 2009). Madaktari focuses on capacity building and training local physicians and neurosurgeons in Tanzania (Madaktari Africa 2009). Finally, Partners in Health delivers community-based health care to poor communities in a handful of developing nations (Partners in Health 2006). The

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<sup>1</sup> An appropriate international assistance program may encourage some local development along those lines.

approaches can be ameliorative and emergency/short-term focused and/or more directed to capacity building and long-term focused.

The contribution of NGOs has increased drastically in order to ‘fill the gap’ left by reduction in state services through SAPs. Such policy may, however, produce latent dysfunctions, such as the undermining local control, and promotion of projects that are disjointed or undermine/compete with national programs (Pfeiffer 2003). In addition, donor constraints may severely limit the capacity of an NGO to challenge the global economic system that contributes significantly to public health challenges in the Global South and the brain drain.

Partners in Health (PIH), an NGO that notably started out providing anti-retroviral treatment in a shanty town in Haiti and treating multi-drug resistant tuberculosis in similar conditions in Lima, Peru, also has projects in Rwanda, Malawi and Lesotho. Headed by Dr. Paul Farmer, PIH is noted for implementing strategies that strengthen rather than undermine national health systems (Pfeifer et al. 2008; PIH 2006)<sup>2</sup>. PIH maintains a holistic approach to their programs from a progressive social justice paradigm focusing on the destitute. The PIH model is based on five principles: accessibility of primary health care to the poor, free health care and education, partnerships with the community, addressing basic socio-economic needs, and a public health sector approach (PIH 2006). They address general health problems as well as more complex illnesses, address public health issues such as access to adequate housing, clean water, sanitation, an adequate diet, in addition to providing educational opportunities to community health workers and to the communities they serve (PIH 2006).

Unlike assistance offered by the World Bank and IMF, Cuba’s assistance is not tied to conditions on the recipient country’s government or political structure (Hammet 2003; Blunden 2008). One can point to the example of Honduras, which received assistance from Cuba after Hurricane Mitch in 1998 that has continued through and beyond 2005 even though Honduras voted against Cuba at the United Nations (NotiCen 2005). As Blunden (2008) concluded, while certainly superior to the structural adjustment model’s conditions that forced recipient nations to privatize

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<sup>2</sup> Pfeifer et al. (2008) cite Doctors Without Borders as another good example of an NGO that does not undermine national health care systems for their project in Khayelitsha, South Africa.

many services, impose user fees, and redirect resources to pay off foreign debt, the Cuban policy of non-interference in local affairs may be detrimental to the ultimate aims of the Cuban assistance programs, since it effectively precludes suggesting that recipient countries restructure the priority that health care receives within recipient country economies or suggest that they focus more on improving public, primary and preventative care. This does not, however, diminish what Cuba has accomplished with the help directly provided through its assistance efforts or its example. After centuries of foreign domination, respect for a recipient nation's independence and sovereignty is a necessary component in fostering a climate that is conducive for collaboration in the health sector.

This research will examine the technical assistance provided by the Cuban government to developing nations, with the primary focus on the work of the Cuban Medical Brigade (BMC) in Ghana. This research will examine how the Cuban effort in bolstering medical education in countries such as Gambia, Guinea-Bissau, Equatorial Guinea, and Ghana helps prepare new generations of doctors who will ideally continue to serve their respective national health systems in needed areas. In order to provide adequate context, this thesis will first provide a description of the state of health care in the Global South (primarily in sub-Saharan Africa), a brief discussion of the impacts of economic liberalization, efforts of public health systems of the Global South, as well as a brief overview of some international assistance programs to their health sectors.

Next, this thesis will describe methods used to analyze and interpret data regarding the Cuban collaboration in Ghana. We will proceed to examine the origins and development of the Cuban health care system, its achievements, their responses to epidemics and social mobilizations, and some of the challenges they face. This will be followed by an overview of Cuban medical internationalism, highlighting experiences in South Africa, Equatorial Guinea and the Gambia.

These set the stage for analyzing Ghana's health care system structure, the disease burden in Ghana, the crisis of out-migration of health professionals from Ghana, as well as strategies implemented to address that crisis. The section presenting the findings on Cuba's assistance to Ghana will address the question: is the assistance given by the Cuban medical brigade context

appropriate? Analysis will be conducted by comparing the data collected by the BMC in Ghana to a 'program appropriateness model' that has been developed regarding health care needs.

## Chapter 2: Methods

### *Primary Sources of Data, Quantitative and Qualitative Techniques*

First we conducted a review of existing literature and documents in order to characterize Cuba's technical assistance to developing nations as an alternative to neo-liberal models that have had their focus on structural adjustment and privatization programs. Then, we examined the overall health care systems in Cuba and the Gambia, highlighting their successes and challenges. The primary sources we used for describing the Cuban health care system were documents from the Pan-American Health Organization (PAHO), the World Health Organization (WHO), UN data, and articles from social science and medical journals. The primary sources we utilized in collecting information on the Ghanaian health care system were documents from the WHO, the Ghanaian Ministry of Health, and data published by the same Ministry and the Ghanaian Health Service.

Cuban medical and technical assistance to Ghana in the health sector will be assessed primarily in terms of accessibility, preventative and curative components and capacity building. A program appropriateness model for foreign technical assistance was developed to serve as reference for assessing various components. Cuba's collaboration in the health sector with Ghana provides an ideal case study that can provide relevant information to those concerned with issues of foreign technical assistance and development. The information and analysis here can contribute to the literature by shedding more light on the nature of Cuban foreign technical assistance to the health sector in the Global South.

Cuban documents that have been made available to the public through the Colaboración Médica Cubana web site show the regions in which Cuban medical professionals are placed, the level of poverty incidence within those regions, their urban/rural split, and the distribution of Cuban doctors compared to the distribution of Ghanaian doctors throughout Ghana's ten regions. This yields a measure of accessibility, reflecting willingness to work where most needed. Tables were established to examine the distribution of Ghanaian doctors and Cuban medical personnel relative to regions with high, medium, or low poverty incidence or doctor/inhabitant ratios.

In addition, the Cuban documents contain indicators of Cuba's assistance and cooperation that reflect their goals and strategies of technical assistance. The information from the BMC included information on the numbers of Ghanaian nurses and doctors being trained in conjunction with the Cuban assistance that gave us a measure of capacity building. All of the documents examined are publicly available.

We compared the data collected from the Cuban medical brigade in Ghana's documents to a program appropriateness model that we had designed based on needs discussed in the introduction for this thesis (see Figure 1). This tool allowed us to assess whether or not the assistance program under examination was context appropriate, through comparing the data of the Cuban medical brigade to the components of our model.<sup>3</sup> An index of dissimilarity was used in order to see how similar or different the distribution of Ghanaian doctors was in relation to the distribution of the Cuban medical personnel. Finally, we performed Pearson correlation tests to see whether or not the variables presented in our tables were correlated with one another, and discuss their meaning in the section on our findings.

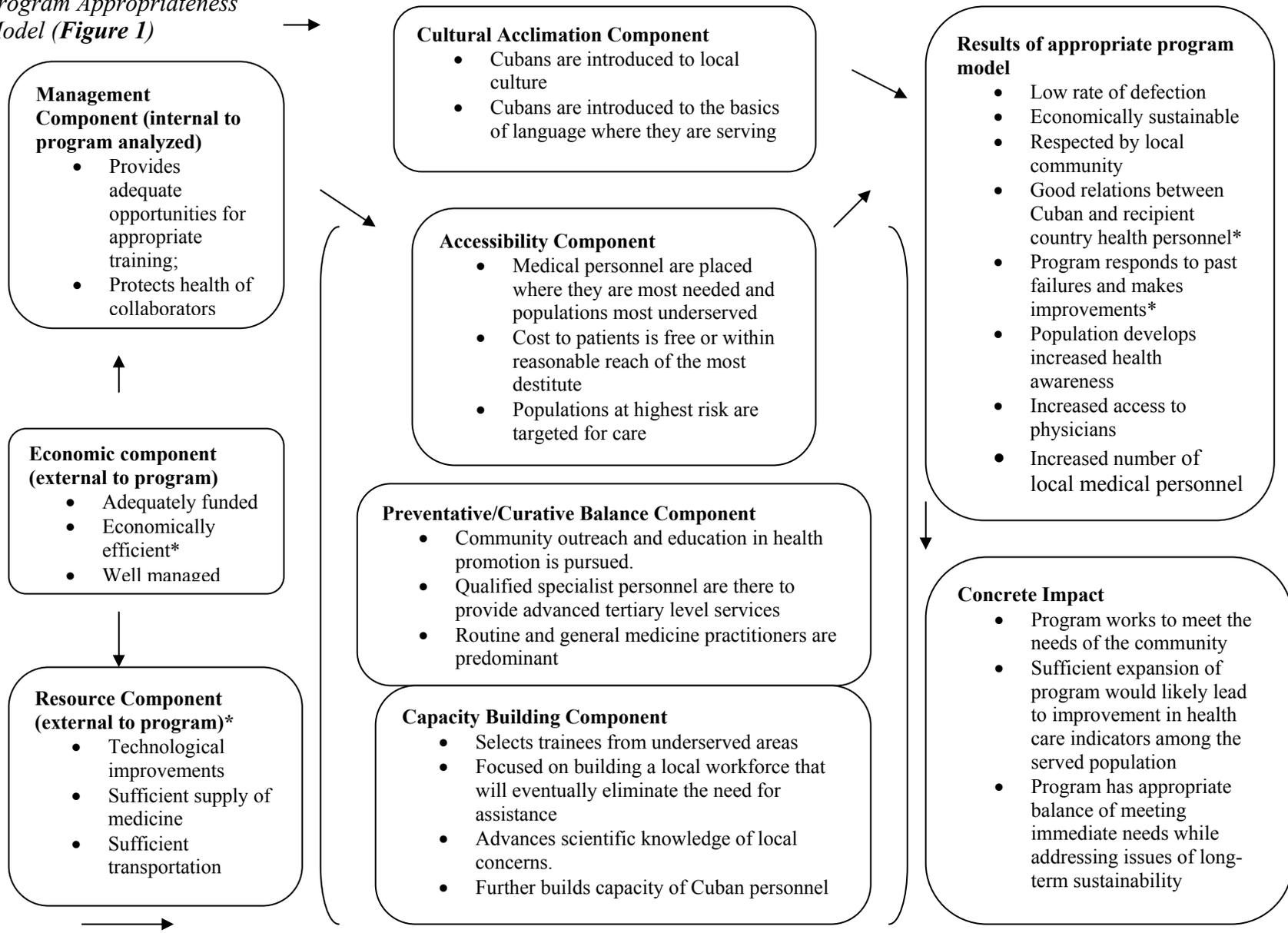
### *Key Operational Definitions*

- ❖ **Accessibility** - Accessibility is measured here by the degree to which the program sends medical personnel to underserved regions.
- ❖ **Preventative and Curative Components** - The *outputs* that are the direct result of the program's inputs examined here are the numbers of patients seen with particular conditions, number of attended deliveries, major and minor surgeries, educational workshops, vaccinations, and radio and TV talks by the BMC in Ghana regarding HIV/AIDS prevention.
- ❖ **Capacity Building** - Capacity building is measured here in terms of numbers of doctors, nurses and assistant physicians trained.

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<sup>3</sup> Points in the model marked with an asterisk are part of a broader context appropriate program for which there was little or no data available.

*Program Appropriateness Model (Figure 1)*



*Limitations of the Study*

There are a few primary limitations of the study. The first was set by the small quantity of data available for analysis on the Cuban medical brigade in Ghana, consisting of two reports with useful data on doctor placement, composition of the brigade, and type of activities performed as well as various other tables, bulletins and blurbs put up by the Cuban Medical Brigade (BMC) in Ghana themselves. Another limitation of the study was the lack of independent scientific evaluations of the work of the Cuban brigade in Ghana. The other factor that limited this study was the inability to interview members of the Cuban Medical Brigade and Ghanaian medical staff, Ministry of Health personnel, and patients.

### **Chapter 3: The Cuban Health Care System and Cuban Health Care Internationalism**

This chapter will provide a brief overview of Cuba's medical internationalism, and will focus in on the experiences of Cuban collaboration in Equatorial Guinea, South Africa and The Gambia. This will provide a broad perspective on Cuban assistance regarding the representativeness of the experience in Ghana compared to its technical assistance in sub-Saharan Africa.

The purpose of examining the Cuban health care system in this context is not to suggest that this model be exported to create a replica or caricature of it in Ghana. Rather, it will show that the Cuban health care system operates within a context of resource scarcity under challenging economic conditions, and that this context is more similar to the Ghanaian context than models built upon abundant material resources and developed infrastructure. Thus, it may facilitate gaining insights about how Ghana might address its health care disparities.<sup>4</sup>

Examining the political and ideological foundations of the Cuban health care system, its evolution, and operation, in addition to providing the economic context in which it works, facilitates interpretation of the meaning of its international outreach efforts.

Examination of Cuba's health care system, with an emphasis on primary health, provides an example of a national strategy to address public health within a context of resource scarcity and helps clarify how Cuba has been able to develop human resources for health to a level in which they are able to provide medical assistance to other nations.

#### *Structure and Evolution*

Before the revolution of 1959 led by Fidel Castro and the July 26<sup>th</sup> movement, the Cuban population was ahead of many other Latin American nations in terms of overall health but suffered from gross inequalities in access to health care with the majority of the

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<sup>4</sup> Granted those contexts are not identical, and certainly there are quite significant cultural and political differences, however there are also similarities as both struggled to overcome legacies of colonialism as well as deep rural-urban socio-economic disparities.

health care services concentrated in Havana (Chomsky 2000; Ubell 1983; Speigal and Yassi 2004).<sup>5</sup> Although Cuba had some highly trained physicians, many people in rural areas lacked access to quality care and were affected by diseases of poverty (Chomsky 2000; Fields 2006). While the rich could have access to such things as cosmetic plastic surgery, many of the islands residents were without access to health care all together. In addition, some parts of the country, particularly the Eastern part of the island known as Oriente, were characterized by very high maternal and infant mortality (Warman 2001).

This situation of urban/rural disparities in access to and quality in health care of pre-revolutionary Cuba parallels many of the challenges faced by other nations in the Global South. Hence, the history of the revolutionary government's approach to addressing these problems may prove instructive. In order to interpret changes in population health indicators, it is necessary to examine the operative paradigm.

Cuba's health system is guided by six principles, which reflect the socialist nature of Cuba's government and the view that health care is a human right, instead of a commodity to be bought and sold in a marketplace. This paradigm holds that the state, through the National Health System (SNS), is the primary entity responsible for providing health care to the population. According to Cuba's foreign ministry, the guiding principles are as follows:

- All services are accessible and free to the population
- Preventative orientation
- Adequate application of the advances of science and technology
- Community participation and inter-sector collaboration
- International collaboration

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<sup>5</sup> There has been considerable attempt by strong ideological opponents of the Cuban revolution and others who want to discount or ignore Cuba's achievements in terms of health care to overemphasize the high quality care that was available for some Cubans with means before the revolution and ignore the disparities in access, both within Havana and certainly ignoring the disparities between town and country. This is generally intended to raise the "baseline" and thus downplay the achievements of Cuba in terms of health care (Speogal and Yassi 2004).

- Normative centralization and executive decentralization (Minrex 2005)<sup>6</sup>

The revolutionary government inherited approximately 6,250 doctors on January 1<sup>st</sup> 1959; shortly thereafter, about half left Cuba for the United States (Franco, Kenelly, Cooper, and Ordúñez-García 2007; Burns 1986, 290-291). Following their exodus, Cuba began an aggressive campaign to train new doctors, build hospitals and generally improve the health of the rural population and developed the Rural Medical Service in order to reach remote rural areas (Franco et al. 2007). By 1970, the island had trained enough new doctors to replace virtually all of the doctors lost due to emigration. By 2004, they had 69,713 doctors for a population of roughly 11 million (ibid.).

The fundamental principles of the Cuban health care system (such as its socialist nature and the guiding principle of health care as a human right) have remained the same since the 1960s, although the country has passed through various evolutionary stages in health care provision (Ochoa y Serrano 2000, Frank 1993). In 1961, Cuba passed the Public Health Law that allowed for the establishment of the National Health System, a system which was “unified, centrally planned and directed, decentralized in its administration, of wide universal coverage, highly efficient, with satisfactory social participation, economically sustainable and open to constant perfecting” (Ochoa y Serrano 2000: 8)<sup>7</sup>.

In part due to Cuba’s colonial legacy and in part due to the corrupt nature of the Batista regime, the social and economic environment of pre-revolutionary Cuba was characterized by nepotism and corruption. Thus, the revolutionary government had to root out corruption from the health sector, train new doctors, nurses and paramedics, develop a comprehensive system of statistics for the health sector, train statisticians, and establish norms, procedures and hierarchy of authority under the Cuban Ministry of Health (MINSAP). The responsibilities of MINSAP increased in the 1970s “to include professional education, the production and distribution of pharmaceuticals, the planning of health resources, and international relations” (Iatridis 1990: 30). The Cuban health

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<sup>6</sup> My translation

<sup>7</sup> Author’s translation

system also built 50 rural hospitals in the 1960's, established 160 polyclinics or community clinics throughout the countryside, and began national immunization programs to eradicate preventable diseases (MEDICC 2009).

This first stage of the development of Cuba's health care system was focused primarily on fighting the diseases of poverty like gastroenteritis, malaria, and polio and controlling disease in the most impoverished sections of the country (Frank 2000; Iatrides 1990). Launching of hospitals, building and staffing health centers in rural areas, giving health care and the capacity building a political emphasis and training thousands of health professionals, made it possible for people who had never had the opportunity before to be examined by a physician and have access to health care (Fields 2006; MINREX 2005). "By 1981, 100 percent of the rural population was receiving health care services. Such diseases such as tuberculosis, typhoid fever, diphtheria, and polio were virtually eliminated" (Iatrides 1990: 30). In the 1960s, community participation in health care started through the involvement in health promotion within mass organizations like the Committees for the Defense of the Revolution and the Federation of Cuban Women (ibid; Franco et al. 2007).

The second stage of development during the 1970s consisted of a significant expansion of the polyclinic model, increased community participation and involvement in maintaining wellness, development of a national program addressing maternal-child health, as well as building general hospitals and plants dedicated to the production of pharmaceuticals (ibid; MEDICC 2009). The goals of continually lowering the infant, child and maternal mortality rates have received high priority within the Cuban health care system since the initial stages of the revolution. The result of the political commitment coupled with interlocking and interdependent sectors of Cuban society working together to address health care needs has provided consistent results in these areas. This is supported by the more or less continual downward trend in infant mortality and under-five mortality (UN 2010; Burns 1986; WHO 2010).

**Table 1: Trends in Infant and Child Mortality in Cuba through 2010**

Year	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Infant Mortality (per 1000 live births)	70	59	50	38	22	17	16	15	10	6	5
Under-five mortality	NA	NA	NA	NA	NA	21.1	19.2	18.6	11.7	7.7	7.7

Source UN Data (2010)

In the 1980s, further significant developments in the Cuban health care model occurred due to slowing progress in addressing the country's health care needs towards the end of the 1970s, and a growing awareness of the potential for improvement. Cuba turned to a more holistic approach more focused on prevention compared to a more costly curative approach, and developed the organizational structure that began to generate international attention and accolades. The emergence of the Family Doctor and the creation of mini-polyclinics or *consultorios* increased the focus on primary care, which has led to international recognition by the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) (Franco et al. 2007; MEDICC 2009; Iatridis 1990; Chomsky 2000). Also significant at this time was the development of Cuba's biotechnology industry (MEDICC 2009).

It was also in this decade that tertiary care facilities and research received priority attention: medical specialization expanded to 55 fields, and national institutes were established to act as national reference centers (centers of excellence) for the rest of the country. This process included national programs for prenatal screening, installation of the first nuclear magnetic resonance equipment in Latin America, and an organ transplant program. By the end of the decade, Cuba had expanded medical education to 21 medical schools spread across the country (ibid).

During the 1990s, Cuba faced its most difficult challenges to date due to the disappearance of its primary trading partners with the collapse of the Soviet Union and Eastern Europe and the subsequent tightening of the US blockade on the island. Due to the centralized and socialist nature of the Cuban health care system, as well as the

immense social capital already established through decades of community involvement and education, the country was able to prevent serious calamities. The 1990s were characterized by adjustment to greater resource scarcity, and an increase in the priority of maintaining health care as one of the principal achievements of the Cuban revolution reflected by an increase in its proportion of the national budget (MINREX 2005).

Since the last part of the 1990s, Cuba has recovered gradually from the multiple blows it was dealt from 1989-1996. Economic recovery began in 1994 and continued at an average rate of 4.3% through the year 2000 in spite of the 1996 anti-Cuban legislation in the US (Molina Diaz 2007). From 2001 to 2006, the Cuban economy grew at an average rate of 6.3% (ibid). This economic recovery is important for ensuring the sustainability of the health care system.

The transformation of Cuba's health care system since 1959 is apparent when examining the following: in 1958, Cuba had 96 hospitals compared to 256 in 1983. In 1958, Cuba had no polyclinics, first aid stations, or dental clinics with just one blood bank, and one medical and dental school compared to 397 polyclinics, 225 first aid stations, 142 dental clinics, 21 blood banks, 17 medical schools and 4 dental schools in 1983 (Burns 1986: 291). By 2007, Cuba's National Health System had 70,594 doctors (62.7 per 10,000 inhabitants), as well as having 10,554 stomatologists (dentists), 110,483 high level technicians and 158,726 mid-level health technicians (PAHO 2007).

Cuba's health care system since the 1980s has been increasingly focused on preventative care. Iatridis (1990) pointed out that Cuba's health care system is divided into six hierarchical, interlocking levels that correspond to the country's administrative and political divisions. The levels of care correspond with the intensity and complexity of treatment, with the lower levels focused on prevention and the higher levels on operational and specialty care as well as research. The bottom three levels of the health care system deliver primary care while the top three deliver secondary, tertiary and quaternary care, respectively (ibid; Speigal and Yassi 2004).

On the most basic level are the mini-polyclinics that consist of a family doctor, nurse and a social worker that serve around 120 families. Sector or family doctor health teams serve approximately 5,000 to 6,000 people. Larger polyclinics as the top tier of the primary health care system are responsible for roughly 25,000-30,000 people. The family doctor gets to know the community, is responsible for the overall health of the community, conducts home visits, is always available, and conducts regular health assessments of community members; the institutions on this level of care also work closely with the mass organizations (Fields 2006; Speigal and Yassi 2004).<sup>8</sup> The next three levels provide progressively more and more specialized care: they are the municipal, provincial and national hospitals (Iatridus 1990, Speigal and Yassi 2004). Each level of care runs parallel to a similar level of political power (Speigal and Yassi 2004). For more specialized care, an individual is referred up through the levels according to his/her needs. In recent years, Cuba has continued to augment its focus on primary care by shifting some services from the secondary and tertiary levels to the primary level of care (PAHO 2007).

While it is important to recognize that these transformations in health care occurred in a country that still suffered from diseases of poverty and disparities in health care characteristic of what has been called the 'third world,' the changes occurred within the context of the great social transformations of a revolution that changed both the dominant paradigm of the nation as well as many of the surrounding institutions to make it possible. Education through the university and medical school was made free for all citizens, enabling new sectors of the population to become doctors for the first time. These changes were interdependent and required political will, heavy involvement from the population and perseverance. Throughout the stages of development of the Cuban health care system, requirements for entering the medical field, such as becoming a nurse,

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<sup>8</sup> Mass organizations like the Federation of Cuban Women (FMC) and the Committees for the Defense of the Revolution (CDR) play a central role in many aspects of Cuban life. For example, the FMC was active in mobilizing Cuban women in the literacy campaign in the early 1960s and the promotion of non-sexist attitudes among the population while the CDR organized communities to protect themselves against counterrevolutionary sabotage and violence (Stone 1981).

or medical technician, have become more stringent since the 1960s when Cuba suffered from a paucity of health care workers and a low national educational level (Frank 1993).

Today, Cubans face challenges similar to those of most industrialized nations in terms of the diseases that claim the most lives (PAHO 2007). The three leading causes of death among Cubans on the island today are heart disease, malignant tumors and cerebral vascular diseases. Cuba has also achieved three of the UN Millennium Development Goals, one of which requires the reduction of under-5 mortality by two-thirds. Infant mortality in 2005 for Cuba overall was 6.2 per 1000 live births with under-5 mortality totaling 8 per 1000 live births (ibid). Prior to the Cuban revolution infant mortality was 70 per 1000 live births (UN 2009) and under-five mortality was 93.9 (CEPAL 2009).

#### *Responses to Epidemics and Social Mobilization*

Early on in the development of Cuba's health care system, the detection of potential health threats and the development of plans to meet the country's short and long-term health needs was paramount. Once the changes of the 1960s were well on their way, the continual lowering of these mortality rates is apparent throughout all periods of the Cuban revolution with the exception of the neuropathy epidemic spurred on by the crisis in the early nineties (MEDICC 2009). The high level of community participation, along with the thorough integration of health care professionals in the community allow for the government to both easily disseminate health care information and treatment to the population, but also to mobilize them in times of crisis. Clear instances of this were seen in the Cuban response to the dengue outbreak of 2001, constant hurricanes and the response to the neuropathy outbreak in the 1990s (PAHO 2007; Chomsky 2000).

Cuba responds to disasters in ways that combat and mitigate health risks. This is partially a result of the intersectoral approach that connects the Civil Defense, public education, and the National Health System that collaborate in disaster planning manifested in epidemiological surveillance, risk reduction within the health institutions themselves, evacuation planning, and logistics (Mesa 2008; PAHO 2007). The Integrated Medical Emergency System provides necessary care until the patient can be taken to a medical

facility that provides first response in times of a disaster, such as a hurricane. In the next phase of disaster response, health teams engage in epidemiological surveillance to ascertain and develop strategies to confront potential health risks (ibid). Successful national responses to potential disasters have been exemplified in Cuba's response to the dengue outbreaks of 1997 and 2002 (Duran Garcia 2003) and hurricanes Dennis, Rita, Wilma and Katrina (PAHO 2007).

### *In the Face of Aggression*

Not only did the revolution have to confront the inherited reality of rural poverty, emigration of health care professionals in the early years of the revolution and lack of health care infrastructure in rural Cuba, but they also have to confront the pernicious effects of hostile actions by the United States that affect the health of the population. Cuba achieved its status as a world health care power in spite of continual aggression from the United States. The US embargo<sup>9</sup> began in 1961; after the fall of the Soviet Union and the Socialist block of Eastern Europe, Cuba lost 85% of its trade, and the US tightened its economic blockade on the island in an attempt to hasten the fall of Cuban government (Chomsky 2000; Garfield and Santana 1997).

The Cuban Democracy Act also known as the Torrecelli Act, the first of two major laws passed in the United States aimed at exacerbating Cuba's economic situation, directly prohibited the sale of food and medicine to Cuba taking direct aim at the health of the Cuban population, one of the socialist revolution's principal achievements (ibid.; American Association for World Health 1997). The result of this coupled with the fall of the Soviet block was a decline in calorie intake during the Special Period (as well as medicinal shortages) and an outbreak of neuropathy that affected about 51,000 Cubans during this period. It was mitigated in part by an opening of agricultural markets, combined with the government commitment to maintain the *libreta* or ration card during

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<sup>9</sup> The word embargo is not entirely precise because it implies a restriction solely between two countries. However, the US embargo affects third parties. For instance, any ship that docks in Cuba from any other nation cannot dock in the US for six months afterwards (Garfield and Santana 1997).

that time; the health care system was already in place, as was vitamin distribution by family doctors (Garfield and Santana 1997; Chomsky 2000).

It is important to note that the blockade interferes with trade between Cuba and third parties, as well as the ability of Cuba to obtain essential medicines and medicinal equipment. An example of both the extraterritorial nature of the US blockade on the island, and the attack on Cuba's health care system was the fine of \$127,750 imposed on the Dutch company Phillips for sale of medical equipment to Cuba in July of 2009 (Caribbean Net News 2009).

Nevertheless, internal and external economic hardships have taken their toll on health care infrastructure, hospital conditions, and work force morale as evidenced by the recent deaths at the psychiatric hospital Mozorra where in early January 2010 twenty-six people interned at the hospital died due to a combination of negligence, chronic illness, old-age and broken windows that let in the cold during a cold front in January. Material shortages have led to patients having to bring some of the basic supplies to the hospital when they come: such as their own towels, sheets and soap. Factors that may have contributed to the deaths at Mazorra include allegations of corruption, saying that workers at the hospital were taking food assigned to the hospital by MINSAP for their personal use. According to the opinion of a BBC correspondent, at least four other hospitals in Havana are in substandard condition with substandard sanitation (Ravsberg 2010).<sup>10</sup> MINSAP has also opened an investigation into the deaths at the Mazorra psychiatric facility (MINSAP 2010).

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<sup>10</sup> It is beyond the scope of this paper to investigate all of the various causes leading up to the events in Mazorra. But it must be noted that the US blockade does impede the purchase of medicine and medical equipment. These external factors along with negligence by those in charge of the hospital that are being investigated by MINSAP may have contributed. Also noteworthy is that the Cuban doctors do not deny that they have had to learn to address patients in a climate of resource scarcity that is less than ideal. And that, in part, makes them ideal candidates for the international assistance they offer to other countries (Field 2006).

### *Cuba's Internationalist Health Missions*

#### *Overview of Cuban Medical Internationalism*

Cuba's former president Fidel Castro stated at the Riverside Church in Harlem the moral maxim underlying its commitment to assisting impoverished countries facing desperate challenges in the provision of quality health care to their respective populations.

“Humanity will attain its greatest consciousness and potential qualities when people feel the same sorrow for the death on any family's child as they would for their own child or other close relative” (Castro 2000). He continued to give some examples of Cuba's medical internationalism and explain that Cuba does not seek enrichment in return (ibid). While not dismissing potential political gains accrued in symbolic capital from such assistance, the moral dimension of Cuba's international assistance in medical care has not gone unnoticed (Gonzales 2000; Chaple 2006; Field 2006; Gorry 2006; Feinsilver 2006; Hammet 2003; Rico 2000).

Certainly Cuba is compensated for its medical internationalism, although host countries pay far less than what they would for the market value of those services (Feinsilver 2006, 2010). The other clear benefit to Cuba has been that it has garnered significant international support. Clearly, aiding those in need of health care, training new doctors, and working with local government and international NGOs to improve the health of people throughout the Global South has been effective in gaining the nation allies. This has helped to garner support for Cuba's political positions on the global stage as reflected by the virtual total isolation of the United States and its policy towards Cuba has been demonstrated 17 years in row by the UN general assembly and its repeated condemnation of the US economic blockade on the island, with many nations citing Cuba's medical internationalism as evidence that U.S. policy towards the island is both unjust and misdirected. In addition, Cuba's medical diplomacy was cited as a reason by Latin American nations to allow Cuba readmission in the Organization of American States (Feinsilver 2010).

What has been the nature and extent of Cuba's medical internationalism in Africa, Latin America and Asia? How has this collaboration assisted the host countries to both address the short-term goals of meeting the immediate health care needs of the population as well as help to build the capacity in the host country to become self sufficient in the long-term? What are the projections? This will help us examine the relative uniqueness of its assistance in Ghana, to which the bulk of our analysis will be directed.

For example, in 2008 Cuba had 259 doctors, nurses and health technicians serving in the Gambia (Hechavarria and Sosa 2008). A logical question concerns what would happen if/when Cuba were no longer able to continue with the assistance. What are the steps that Gambia and Cuba are taking so that the Gambian public health system and other public health systems that are recipients of Cuban medical collaboration become more robust and self-sufficient? Prior research has been conducted on the Cuban collaboration in South Africa (Baez and Sanders 2004; Hammett 2003), although it did not compare across recipient countries nor seek to assess program appropriateness of the Cuban medical collaboration.

Cuba's first long term internationalist health mission took place in Algeria in 1963 during a time when Algeria had a conflict with Morocco (Grundy and Budetti 1980; Field 2006). This followed the first internationalist short-term medical mission that was in response to an earthquake in Chile (Chaple 2006). Cuban medical missions have since expanded in size and have continued to grow after the fall of the USSR and the advent of the Special Period. "In the year 2008 more than 38 thousand Cuban doctors, dentists, nurses and technicians are working as volunteers in 73 countries, according to Cuba's Ministry of Health. Among them there are 1,500 medical workers in 35 African countries"<sup>11</sup> (Koppel and Waters 2008).

It is notable that Cuba often sends doctors to countries that are engaged in social transformations and/or that have pressing humanitarian needs. However, it is also clear that the political position of a particular country towards Cuba has not decreased Cuba's

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<sup>11</sup> Author's translation

willingness to provide medical collaboration, as is underlined by the offers of Cuba's assistance to the US after Katrina, and support to Honduras while they were voting against Cuba (NotiCen 2005; Feinsilver 2010). All of Cuba's assistance is the result of bilateral agreements between Cuba and the recipient nation(s).

By far the largest number of Cuban doctors is working with Venezuela, followed by Bolivia. The medical collaboration forms part of a trade agreement between the two nations in which - in exchange for preferential prices in oil and extension of credit - Cuba provides Venezuela with thousands of physicians (23,382 of 31,390 medical personnel in the Barrio Adentro programs as of March 25, 2006) and other health workers willing to practice medicine free of charge in rural and impoverished areas (Feinsilver 2006, 2008, 2010; Fields 2006). In addition, Cuba has agreed to "train 40,000 doctors and 5,000 healthcare workers in Venezuela and provide full medical scholarships to Cuban medical schools for 10,000 Venezuelan medical and nursing students" (Feinsilver 2006). Furthermore, Operation Miracle has been added on to the agreement in which Venezuela helps fund free ophthalmologic surgery performed by Cubans across Latin America (ibid; Charkraborty 2006).

Generally, Cuban doctors volunteer for a period of two years, and may decide to extend their service. While in Gambia as a Peace Corps volunteer, I spoke with many Cuban doctors who had volunteered multiple times, and/or chosen to extend their stay. Although there is much discussion in the Western press about Cuban defections, that characterizes 2% of the volunteers (MEDICC 2009). Even less talked about in the US media are the overtures and efforts that the US goes to in order to undermine the effectiveness of Cuba's assistance programs by encouraging defection. Cuba has adapted to the attrition rates and plans accordingly (Feinsilver 2010).

### *In South Africa*

In Dr. Carmen Baez's study based on in-depth interviews with Cuban and South African personnel that the program started out very strong and tended to weaken with less attention on providing a proper induction into the country with later groups of doctors,

and that “little has been done by South African organizations to help integrate the Cuban doctors into local communities” (Baez 2004: 32). This could be due in part to the shorter terms that Cubans now serve in Guanteng province of South Africa. In the beginning, they had few limitations and the ones in the first four groups had served 6-8 years; the newer groups signed three-year contracts. Certainly, there are the needs of both those who are served and those who serve that should be balanced.

The Cuban presence in South Africa was motivated by a need that arose with the majority of South African doctors working in the private sector, leaving the poor to fend for themselves (*ibid.*; Fields 2006). Cuba’s collaboration is based on the real needs and suffering of a population from the misdistribution of doctors (due to a health care system that is market based, and a legacy of rural poverty and apartheid), with the worst shortages of doctors and health care personnel in rural areas for Black South Africans, as opposed to being a mere ‘political’ ploy (Baez 2004; Hammet 2003). The current disparity in access and quality of health care exacerbated by both internal and external brain drain in South Africa has resulted in what has been referred to as “a reinvention of apartheid in our health care system” by Dr. T.K.S. Letlape, president of the South African Medical Association (Fields 2006).

Baez (2004: 37) also found that the Cubans were very supportive of primary level health care and preventative strategies were very “supportive in the training of health workers.” She also documented a communication gap between the Cuban doctors and the South African management as a significant issue on the organizational level. The language barrier, however, did not surface as a primary concern. She noted that the program worked to address communication challenges by selecting Cuban doctors who had some formal English. The doctors themselves, once in the program, continued to learn English and local languages such as Tswana. She concluded with a series of recommendations, including having South Africa and Cuba recommit to the program and maintain the level of medical assistance, develop more “appropriate induction strategies,” “explore and promote the Cuban approach to patient care” as well as extending the program to other provinces (Baez 2004: 38).

Most noteworthy of this experience is the fact that people have access to health care provided by qualified and competent personnel who, without the Cuban assistance, otherwise would not. Hammet (2003) indicated that although some negative perceptions of the Cuban doctors existed, due in part to a fear that they were taking jobs from South African physicians, that overall the perceptions were positive. He indicates that those within the medical community are aware that Cuban doctors are posted primarily to rural hospitals and are providing services that may otherwise not be available. South African doctors made it clear that without the work of the Cuban doctors many of the services provided would cease. This is precisely why the example of Cuba's medical collaboration is so significant. It represents a willingness to go to areas that have suffered severe human capital flight, enduring poverty and poor infrastructure.

#### *In Equatorial Guinea*

Equatorial Guinea was colonized by Spain under the rule of Francisco Franco; during the time of colonization, its citizens were treated as 'legal children' under the racist regime. Then in 1968 the ruthless and kleptocratic Francisco Macías Nguema took over, declared himself 'socialist,' closed schools and persecuted Equatorial Guinea's ethnic minorities and looked upon those having education with suspicion (Waters and Koppel 2009). Since Teodoro Obiang overthrew Nguema in 1978, there have been some efforts to develop the country's infrastructure (ibid.). However, Equatorial Guinea still suffers - along with a majority of the countries in Africa - from sharp economic disparities between urban and rural areas, problems with access to safe drinking water and sanitation, malaria, struggles against HIV/AIDS, and the brain drain due to a combination of push and pull factors (Koppel and Waters 2008).

As of 2005, the UN indicated Equatorial Guinea's infant mortality rate as 123 per thousand live births (UN 2008). Data collected by the Cuban medical brigades indicates that there is a much higher survival rate for those children born in a hospital or medical clinic, down from 47 per 1000 in 2002 to 16.5 in 2007 (Koppel and Waters 2008). This is complicated by reluctance among many in the population to seek out attention at a

medical facility. In order to confront this challenge, Cuban doctors attempt to reach out to traditional healers and traditional birth attendants so that they can recognize which conditions may need more intensive care and refer patients to a medical facility (ibid.).

Cuba has 162 medical personnel collaborating throughout Equatorial Guinea providing medical services free of charge. Equatorial Guinea covers the cost of maintaining the Cuban health professionals providing them with accommodations and a stipend, as in all other cases, the Cuban government continues to pay the salary of the Cuban doctors at home to their families.

According to data released by the Cuban Medical Brigade in Equatorial Guinea (BMCGE), in February of 2007 the 162 member team operates in all regions in Equatorial Guinea but is concentrated in Bata (52 personnel stationed) and in Malabo (42 personnel). The rural areas of Ebibyeng and Mongomo have the next highest number of personnel with 9 and 8 stationed there, respectively. The brigade had by 2006 conducted a total of 55,001 operations of which 14,777 were major surgical operations free of charge to the population.

The brigade also has engaged in 386 radio programs and 22 TV programs aimed at sensitizing the population to the realities of HIV/AIDS and HIV/AIDS prevention, and had through workshops reached 149,261 people directly through awareness programs. The brigade's document also states that among the population that they have reached, infant mortality has dropped to 17 per 1000 live births and maternal mortality to 1.9 per 1000 (Álvarez 2007).

As in Gambia, Eritrea and Guinea Bissau, in 2000 a medical school was opened in Bata, Equatorial Guinea as a way of building capacity in order to make the assistance more sustainable. This was a joint project between Cuba and Equatorial Guinea that works closely with the Ernesto Che Guevara Medical School in Piñar del Rio, Cuba. The school trains physicians and health personnel to staff Equatorial Guinea's hospitals and clinics in both urban and rural areas (Kopel and Waters 2008). Students spend 5 years in

the school in Equatorial Guinea and the sixth in Cuba. By August 2008, the school had graduated a class of 122 students (ibid.).

The focus on training local people from poorer rural communities and inculcating them with an ethos to serve those in need, rather than to leave in search of better conditions is in line with building up the capacity for a better public health care system. The primary goal of Cuba's medical missions in Guinea is to see Equatorial Guinea become self sufficient in health care provision by developing enough qualified personnel to serve the country's population (ibid). The other goal of Cuban assistance in Equatorial Guinea, as in all places served, is to foster a paradigm shift in the minds of the doctors (and observers) away from a perspective that holds health care as a commodity instead of a human right (Frank and Reid 2005).

The formation that the Cuban directed medical program offers, like that of the Cuban Revolution itself, infuses the student with a distinct class perspective. Instead of promoting personal 'advancement,' it is based in class solidarity and in providing medical attention as a human right. It seeks to inculcate the will to take the medical services to workers and farmers in isolated rural zones and small towns where before said services were inaccessible and unaffordable (Koppel and Waters 2008: 64)<sup>12</sup>

By August 1 2006, 74 Equatorial Guineans graduated as doctors in a ceremony headed by Dr. Roberto González, and an additional 164 were enrolled in the program as of 2006. These newly formed physicians are placed at various districts working with the Cuban teams (Álvarez 2007). The focus on capacity building and the efforts to inculcate a paradigm shift towards community responsibility and a willingness to serve where needed are a major part of the model that we will be examining further.

### *In The Gambia*

According to the vision and mission of DOSH, the Gambia seeks an inclusive health care system that will turn a dire situation<sup>13</sup> onto one that will be a "model in the Africa region by the year 2020" (DOSH 2001). The Cuban medical brigade in The Gambia is playing a significant role through efforts of improving accessibility, the provision of preventative

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<sup>12</sup> Author's translation.

<sup>13</sup> See the description of the Gambia's health care system attached in the appendix

and curative services, capacity building in the Gambian health sector, and scientific research aimed at addressing malaria (Fields 2006). Cuba's collaboration in the Gambia began with the closure of the first session of the Cuba-Gambia Mixed Commission in 1996 and sending 35 Cuban medical personnel to the Gambia that preceded the implementation of the Comprehensive Health Program in The Gambia with the augmentation of the number of personnel to 158 (BMC Gambia 2006). There are currently 259 Cuban doctors working in The Gambia (Hechavarria and Sosa 2008).

Cuban assistance consists of both doctors providing direct care to underserved areas in tandem with the government sponsored PHC system as well as helping train and instruct future generations of Gambian doctors and health care personnel in order to mitigate this situation. These components are clearly aimed at addressing issues of accessibility and sustainability (Field 2006; Gonzales 2000). According to Dr. Suiberto Hechavarria, head of the BMC in the Gambia, and Dr. Oramis Sosa, by 2009 the BMC in Gambia had performed 8,162,017 medical consultations and 34,352 major surgeries out of a total 125,934 operations. The brigade had also attended 305,917 births and performed 6,515 cesarean sections. The brigade documented saving 114,141 lives of patients who were "on the edge of death or with lethal diseases"<sup>14</sup> (Hechavarria and Sosa 2009: 1). Highlighting the critical nature of the Cuban cooperation in health in The Gambia, Ismaela Njie, the head of the sickbay in the Farafenni hospital (where the majority of the doctors are Cuban), said that without the presence of the Cuban doctors, "the Gambian public health system would collapse" (Fields 2006).

Cuban doctors in the Gambia work in hospitals, health centers, and dispensaries and make treks into other villages. Cuba has also established a medical school in The Gambia in 1999 graduating their first eleven doctors in May 2006 (Gorry 2006.) "Overcoming serious obstacles in a severely resource-scarce environment, Cuban faculty and Gambian professionals, students and authorities were able to accomplish the daunting task of establishing a medical school with a curriculum that integrates regional and Cuban experiences, and is based on internationally recognized principles of medical

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<sup>14</sup> Author's translation

education” (Cabezas 2005: 5). By 2009, 22 Gambian doctors had graduated as a result of the Cuban program. The BMC in Gambia estimates that in 5 years time there will have been enough Gambian doctors graduated through the program to “ensure the sustainability of the medical services in the country” (Hechavarria and Sosa 2009: 1).

### *Conclusion*

In this chapter, an example has been provided of an approach to developing a national health care system through the Cuban experience. This approach was characterized by the guidance of specific principles that greatly augmented the population’s access to health care services. This was achieved in large part due to the island’s early focus on rural development of health care services and greater accessibility to medical education for the population that continually increased the number of medical personnel per capita. The Cuban experience has also shown that in spite of great adversity, it is possible to confront, reduce and in some cases eradicate diseases such as polio and gastroenteritis through comprehensive PHC and vaccination campaigns. The experience has also demonstrated that PHC can be an efficient and cost effective method of health care provision. Together these developments have led to Cuba having health care indices comparable to those of the industrialized world.

Next, the history of Cuban medical internationalism was briefly examined, highlighting the experiences in South Africa, Equatorial Guinea and The Gambia. In all three cases, the Cuban involvement is in response to local needs, Cubans are willing to work in remote areas, and they provide both curative and preventative health care services. Also discussed were efforts by Cuban doctors to adapt to local culture and language, as well as assist in the formation of new medical schools within Equatorial Guinea and The Gambia.

## **Chapter 4: The Ghanaian Health Care System and Cuban Medical Collaboration in Ghana**

The first part of this chapter provides an overview of the current state of health care in Ghana by looking at Ghana's major health indices and investigates the general structure of the Ghanaian health care system in terms of where authority lies as well as the distribution of health care facilities. The Ghanaian government faces challenges in terms of disease burden and the crisis faced in human resources for health, that we also examine. The review examines strategies pursued by the Ghanaian government and national health care system to address various challenges regarding migration of medical personnel to urban areas as well as those leaving Ghana altogether. These sections will illuminate the situation of health care delivery and challenges faced by the government and people of Ghana as well as provide a framework for analyzing Cuba's medical assistance to Ghana.

The second half of the chapter reports findings on Cuba's collaboration with Ghana. It provides a program appropriateness model that is used as a reference tool in evaluating the components of the program. This helps to identify which components are appropriate in addressing challenges that the Ghanaian Health Care system faces, such as accessibility measured in terms of doctor placement within Ghana, preventative and curative components of the Cuban program, and the capacity building efforts helping to form new Ghanaian medical personnel. Examination of what has been done here may help shed light on more steps that may be taken to strengthen the Ghanaian health care system in a sustainable manner.

### **The Ghanaian Health Care System**

#### *Structure and Overview*

Ghana currently ranks 152<sup>nd</sup> on the Human Development Index, a measure which goes beyond simple GNP, to provide a more comprehensive view of development including measures on economic inequality, poverty, literacy and a compendium of various health

care indicators (UNDP 2009). As of 2007 Ghana had a life expectancy of 56.5 years and infant and child mortality rates (in 2003) of 64 and 111, respectively. The infant and child mortality rates had apparently climbed from 57 and 108 in 1998 (*ibid.*; Ghana Ministry of Health 2003; WHO Country Office Ghana 2005). While far from being at an acceptable level, these numbers are much better than the average for the West Africa region. Infant and under five mortality for the WHO Africa region for 2004 were 100 and 167 respectively (WHO 2006). Within Ghana (a primarily rural society with two major cities, Accra and Kumasi), these figures tend to be more severe in remote rural areas and in places with a higher incidence of poverty. This is further complicated with inadequate water supplies and sanitation facilities in some areas (Ministry of Health and Ghana Health Service 2008).

Ghana has a medical system that is decentralized into ten political regions, and each region is broken down into a total of 138 divisions. Ghana's health services are the official responsibility of the Ministry of Health that formulates the country's health strategy. Authority is decentralized as regional ministers of health supervise and monitor what is done at the district level. Health delivery in Ghana is further decentralized within the regions at the district level and is implemented through the Ghana Health Services. Each district within the region determines its health priorities and courses of action to address the district's needs (*ibid.*; WHO Country Office Ghana 2005).

Ghana's health care delivery system is broken down into three different levels of care - primary, secondary and tertiary, with the country's focus on the primary level. The primary level of care includes the health centers and polyclinics, the district hospital and maternity clinics. The district hospital provides all of the basic health care services including in and outpatient care and maternity services. The secondary level of care is more specialized and is comprised of the regional hospital, with the tertiary level for even more specialized care involving teaching and specialized hospitals (Ministry of Health and Ghana Health Service 2008). A significant portion of Ghana's health care delivery comes from private and missionary providers, notably the Christian Health Association of Ghana (CHAG) that "manages 152 facilities and is estimated to provide 36% of the

public health services in the country” and like the Cuban assistance we will examine - it focuses on poorer and underserved areas (WHO Country Office Ghana 2005: 14).

**Table 2. Ghanaian Health Facilities Table by Region**

Region	CHP S*	Clinics	District Hospital	Regional Hospital	Maternity Home	Poly Clinic	Specialized Hosp	Teaching Hospital	Health Center	Other	Total
Ashanti	5	212	20	1	103	2	5	2	121	59	384
Brong Ahafo**	1	0	5	1	13	NA	NA	0	84	NA	220
Central	20	52	10	1	19	1	1	0	45	2	158
Eastern	21	44	5	1	9	0	0	0	16	7	103
Greater Accra	3	252	33	2	45	6	8	2	21	2	374
Northern	26	8	14	1	6	1	2	1	93	0	152
Upper East	55	47	5	1	2	0	0	0	30	0	140
Upper West	30	12	6	2	6	0	0	0	88	0	144
Volta	0	9	3	0	6	0	0	0	41	1	60
Western**		12	10	0	10	NA	NA	0	63	NA	261
Total											1,996

Source: Ghana National Health Service (GNHS 2010) These include private, public, and NGO facilities. Also where GNHS failed to provide a category, the number was subtracted.

\*Community Based Health and Planning Services

\*\*Data from WHO Country Office Ghana (2005) Ghana Ministry of Health Institutions. Brong Ahafo and Western’s totals come from GNHS 2010.

A glance at Table 1 shows that the tertiary services are concentrated in The Greater Accra and Ashanti regions, which boast the capital city (Accra) and the second largest city (Kumasi). Health facilities are much less abundant in the regions that are more predominately rural, notably in the Northern, Upper East, Upper West and Volta regions. However, it is notable that the Community Based Health and Planning Services are found throughout rural areas with the exception of the Volta region.

The government of Ghana has worked on developing a national health insurance plan in order to improve accessibility (in terms of reducing cost barriers) to health care to Ghanaians.<sup>15</sup> An additional barrier confronting patients and the health system are cost and access to essential medicines that tend to be more affordable in the public (and mission) sectors than in the private sector. However, those medicines tend to be scarcer in the public sector (ibid).

Ghana's government invested 15% of total government expenditure on health care, of which the vast majority (92%) went to salaries. The high percentage destined to salaries is a clear attempt to address human capital flight from the health sector which will be discussed more towards the end of this section. The amount of money allocated to develop primary level services at the district level dropped to 19% of the total from 45% in 2003 and fell short of the 40% stipulated for the divisions (WHO Country Office Ghana 2005).

### *Disease Burden*

The leading cause of death in Ghana is HIV/AIDS, which in 2002 accounted for 15% of all deaths in Ghana and is closely followed by malaria in the same year (11%). From 2000 to 2003, malaria was responsible for 33% of all deaths of children under five years, followed by neo-natal causes (such as diarrhea during the neo-natal period) with 28% of all deaths (WHO 2006). In 2003 and 2004 HIV/AIDS had infected about 3.1% of the population, which dropped slightly to 2.7% in 2004.<sup>16</sup> Pneumonia and diarrhea related diseases followed in leading causes of death for children under five accounting for 15% and 12% of total deaths, respectively. Tuberculosis was responsible for 4% of all deaths among all age groups (WHO 2006). Ghana is still struggling to eradicate or reduce many tropical and parasitic infections that persist in various regions such as guinea worm, buruli ulcer, onchocerciasis, trachoma, lymphatic filariasis (commonly known as

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<sup>15</sup> To see a more detailed discussion of Ghana's Health Insurance Plan please see either the World Health Organization Ghana Country Office's 2005 review or there MOH's 2007 annual report.

<sup>16</sup> There were 104,505 total *reported* cases of HIV/AIDS in Ghana by the close of 2005, with roughly 200,000 cases estimated in the population. There were 14,449 new cases in the same year (WHO Country Office Ghana 2005).

elephantiasis), schistosomiasis, and soil-transmitted helminthes (Ghana Ministry of Health and Ghana Health Service 2008).

If the leading causes of death are grouped into three categories, we can clearly observe that those diseases typically defined as diseases of poverty (not including those diseases of poverty which did not make it into the top ten in 2002) accounted for 51% of all deaths (see table 2). Malaria is included as a disease of poverty due to the fact that it is preventable and treatable by various medications, and infection rates can go down with adequate use of insecticide treated bed nets and spraying of insecticides (WHO 2010). HIV/AIDS was included as a disease of poverty, due to its correlation of incidence in poorer areas, and the costs of prevention and community education. If, however, HIV/AIDS and malaria are excluded from our classification as diseases of poverty due to their incidence being linked both with environmental/geographical factors (poor people in dry regions would suffer significantly less cases of malaria) and lifestyle factors, diseases of poverty would account for 15% of all deaths.

*Table 3. Top 10 Causes of Death among Ghanaians in 2002*

<b>Disease Name</b>	<b>Percent of All Deaths (will not add to 100)</b>	<b>Diseases of Poverty</b>	<b>Geographic</b>	<b>Lifestyle/Wealthy/Other</b>
HIV/AIDS	<b>15</b>	<b>X</b>		<b>X</b>
Malaria	<b>11</b>	<b>X</b>	<b>X</b>	
Lower respiratory Infections	<b>8</b>	<b>X</b>		
Perinatal conditions	<b>8</b>	<b>X</b>		
Cerebrovascular diseases	<b>6</b>			<b>X</b>
Ischaemic heart disease	<b>5</b>			<b>X</b>
Diarrhoeal diseases	<b>5</b>	<b>X</b>		
Tuberculosis	<b>4</b>	<b>X</b>		
Traffic accidents	<b>3</b>			<b>X</b>
Chronic obstructive pulmonary diseases	<b>2</b>			<b>X</b>
<b>Total</b>	<b>67</b>	<b>51</b>	<b>11</b>	<b>31</b>

Source (first two columns): WHO Mortality Country Fact Sheet 2006

Ghana has embarked on several programs to reduce and eliminate many of the diseases it confronts that include a variety of preventative and treatment strategies including the

Expanded Programme on Immunization (EPI) and the two-year strategic plan for Neglected Tropical Disease Control. EPI is a program that attempts to immunize children throughout all of Ghana's regions and districts against diphtheria, pertussis (whooping cough), tetanus, hepatitis B, and diseases caused by haemophilus influenzae type B such as meningitis through the administration of three doses of the Penta 3 vaccine that combines the DPT, Hepatitis B and Hib vaccines. The trajectory of vaccination coverage seems to be positive. In 2005 coverage was 84.5%, up from 76.4% in 2004. The primary difficulties lie in reaching remote areas, like the Volta Lake basin districts and coordination of services at the community level (WHO Ghana 2005; WHO Country Office Ghana 2005).

#### *Human Resources for Health in Ghana*

In order to provide health care to its population and address the challenges described above, in 2008 Ghana had only one physician for every 13,074 people. In spite of the fact that this is far from the 1:5000 minimum recommended by the WHO, data from the Ghana's National Health Service demonstrates an improving trend since 2005 when there was only one doctor for every 17,899 people (Ghana Ministry of Health 2009). In 2005 there was one nurse for every 1,587, and one pharmacist for every 14,286 people (WHO Country Office Ghana 2005). By 2007, the ratio of nurses overall per population had improved to one for every 1,451 people (Ghana Ministry of Health 2009).<sup>17</sup> From 1993 to 2004, the Ghana public health sector lost 892 physicians, 2,512 nurses and 610 pharmacists with a steadily worsening trend from 2000 to 2004 (WHO Country Office Ghana 2005).

Much of the damage to Ghana's health care system started in 1982 when the government had signed on to a SAP that required reduced spending on the health sector and the imposition of user fees. The reduction in money destined for the health sector led to a reduction in salaries and other parts of the health system that led to additional flight from the health sector. Ghana lost 1,035 doctors in this period- from 1,700 to 665 physicians

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<sup>17</sup>The author was unable to locate up to date data on pharmacist to population ratio.

in the public sector, and the imposition of user fees led to a decrease in utilization of health services (Colgan 2002).

The loss of health workers and professionals from the public to the private sector, from rural areas to more urban ones and from Ghana to other more wealthy nations is the end result of a combination of push, pull, stay and stick factors.<sup>18</sup> “Push” factors are variables impelling a health worker to move away from an area that may desperately need his or her services, include inadequate remuneration, inadequate schools, or related facilities for his or her family, inadequate housing, difficult and/or unsafe working conditions, lack of opportunities for career and educational advancement, and the overall hardship imposed by the difficult conditions arising from living in extremely impoverished areas. Of these, some are endogenous to the health system and others are exogenous. Inadequate access to the tools, medicine and equipment necessary for work also factor in as pressures cited by workers classifiable as endogenous push factors.<sup>19</sup> In Ghana, all of the above examples

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<sup>18</sup> “Pull” factors are those that entice health professionals to move away from their communities towards a new community, and comprise a list of factors that are virtually the opposite of the list of push factors. These include: better pay, housing, schools, utilities, working conditions and career opportunities. They also include recruitment efforts by various NGOs, recruitment of health professionals by wealthy nations and agencies seeking to bypass the training costs and the higher pay of domestic workers (Padarath, Ashnie; Chamberlein, Charlotte; McCoy, David; Ntuli Antoinette; Rowson Mike; Loewensen, Rene; EQUINET and MEDACT 2003; WHO 2006). For instance, 27% of the doctors in the United States and 33% of the doctors in the UK were trained abroad. For nurses, these figures are considerably lower, at 5% of the nurse workforce in the US and 10% in the UK (WHO 2006).

“Stick” factors are those variables that encourage a physician, nurse, or other health worker to remain as part of the workforce where they are needed throughout the Global South. These may include increases in pay or benefits, commitment to the community that is being served, patriotism, a system of ethics that prioritizes the needs of the community, family ties, emigration barriers, and or difficulties in adjusting to a foreign society and culture (Paradth et al 2005). “Stay” factors refer to those variables that persuade a migrated health professional to remain in the wealthy nations and not to return home to work. They include reluctance to break newly established bonds with the new communities in which they serve, attachments to a more comfortable or even lavish lifestyle, and the perception of a lack of job opportunities in their home countries or communities.<sup>18</sup> These factors are essential to consider, particularly when one of the significant strategies recommended by the WHO and pursued by a number of the nations of the global South is the encouragement of emigrated professionals to return home to serve in their communities.

<sup>19</sup> Additional exogenous “push” factors include civil unrest and crime. The importance in underlying the endogenous or exogenous nature of given factors is that in order to have a

of general push factors have been cited as taking a toll on their health work force (WHO Country Office Ghana 2005).

The numbers cited above on attrition rates and doctor and nurse population ratios hide some of the severe regional disparities affecting the population and the Ghanaian health system. Ghanaian physicians have been concentrated in more urban areas and regions such as the Ashanti and Greater Accra regions with 1 doctor for every 9,861 inhabitants in 2008 (an improvement from 2007 1:10,667) in Ashanti. Greater Accra is the only region within Ghana that approaches the 1:5,000 WHO minimum standard with 1 physician for every 5,177 (also showing a slight improvement from 2007 1:5,202). In 2008, the Northern, Upper West and Upper East regions have severe shortages. The Northern region had only 33 physicians in 2008 (up from 24 in 2007) or one per 70,744 people. Upper West and Upper East were also in very bad shape with 44,736 and 33,843 persons per physician, respectively, in 2008, reflecting no increase in physicians the previous year (43,253 and 33,111 in 2007, respectively), but was instead due to an increase in the population attributable to the fertility rate (Ghana Ministry of Health 2009).

#### *Strategies to Address the Crisis in Human Resources*

Ghana has implemented a few notable strategies to address some of the endogenous push factors within the health sector such as the Deprived Area Incentive Allowance (DAIA) and Additional Duty Hour Allowance (ADHA). The ADHA was introduced in 1999 as a bonus for working extra hours and is reflected in the brief discussion on the budget earlier in this section through the increase in salaries paid to health sector employees of the public sector. The DAIA, introduced in 2004, was a strategy that addressed regional disparities through the offering of additional monetary, educational and housing incentives to those working in “deprived areas” (WHO Country Office Ghana 2005). These are two methods Ghana has employed to address “push” factors that contribute to internal human capital flight from the public health sector and from underserved areas.

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comprehensive solution to this mortal conundrum, multiple sectors of society at the community, organizational, national and international levels must be involved in the solution.

Another strategy followed in addressing the shortage of personnel has been partnering or working with groups in the missionary sector, like CHAG, that have unfortunately received insufficient national support for their work (ibid.). Finally, there is yet another approach that Ghana has been pursuing which is the central focus of this thesis: the collaboration with Cuba through bilateral agreements in which Cuban doctors working through the Cuban Medical Brigades (BMC) to provide health care services to its population and strengthen the national health care system. It is to this that we now turn.

### *Cuban Medical Collaboration with Ghana: Findings*

#### *Overview of the BMC in Ghana*

Cuban medical collaboration with Ghana emerged with sending of 17 medical collaborators to the Northern region of Ghana after the signing of the “Agreement on Economic, Scientific and Technical Collaboration” and a document of “General Conditions” that established terms of the collaboration in April of 1982. Flight Lieutenant Jerry Rawlings became president of Ghana on December 31, 1981, after overthrowing Limann’s People’s National Party. It is possible that Cuba’s medical collaboration with Ghana began out of solidarity with President Rawlings, as he was known to have Marxist sympathies and even some Cuban advisors (Meredith 2005). However, it must be noted that Cuban collaboration with Ghana has continued uninterrupted when Rawlings moved more towards the centre or when President John Kufuor succeeded him.

The number of Cuban medical collaborators increased to 54 in May of 1994 with VII Session of Mixed Commission. By 2000, that number had increased to 138 and by 2002 to 189 (BMC Ghana 2008). By 2009, there were 191 Cuban medical volunteers working in Ghana’s national health care system (Embajada de Cuba en Ghana, 2009). Cuba’s medical collaboration with Ghana is part of the larger Comprehensive Health Program of Cuban medical assistance discussed earlier that includes assistance to many nations throughout the Global South.

The Cuban medical assistance to Ghana encompasses collaboration on various levels of Ghana's health care system and addresses the problem from several angles. Cubans work in 69 health institutions throughout Ghana at all three levels of care - primary, secondary and tertiary, with the majority working on the primary level. In 2007, the Cuban medical brigade saw a total of 1,391,630 patients and the BMC in Ghana documents 'saving' a total of 23,460 lives, with cumulative totals documented of 10,972,342 patients seen and 538,658 'lives saved' (BMC Ghana 2008).

A successful system of primary health care is considered to be one that is positively reinforced, is easily accessible by the population, effectively utilizes competent staff, and contains appropriate management components (Unite for Sight 2009). It is important to consider the level of cultural acclimation and language training they are afforded so that the population feels comfortable and confident accessing medical care from the brigade. In addition, it is critical that the program adequately addresses both short term (improving provision and access to care) and long term (sustainability, training and retention of new personnel) needs.

In order to assess the appropriateness of the approach of Cuban collaboration, the author developed a program appropriateness model (Figure 1) that reflects the various components necessary for a holistic approach to technical assistance to the public health sector and will serve as a tool for the evaluation of the program's strategy. It will also help us to gauge if the program truly is working towards meeting and corresponding to the specific needs of the Ghanaian population and the national health system. The first two columns in the model represent specific inputs, where the "Results of appropriate program model" represents outputs and "Concrete Impact" represents likely outcomes. Starting with the economic and resource components, an appropriate program of technical assistance consists of internal and external components. The external components that cannot be adequately assessed due to lack of data are the economic and resource components. The Cuban medical collaboration with Ghana started in 1982 and continues into the present. The budget for the program has been managed with austerity

(BMC Ghana 2006). As far as the items covered under the resource component such as adequate operating theaters and medicinal supplies, those may come from a variety of sources, the Ghana Ministry of Health and National Health Service themselves, or outside donors.

The next component in the model is sufficient management. A concern for the sustainability of any program is staff retention. In the case of the Cuban doctors, the possibility of losing valuable personnel to other nations lured by financial and monetary incentives that Cuba's government can't compete constitutes a significant risk in terms of both financial cost and prestige to the Cuban government. This risk was augmented under the Bush administration's 2006 Cuban Medical Professional Parole Program through the state department to facilitate and encourage Cuban doctors to defect and, in essence, undermine the Cuban health care assistance program (Feinsilver 2010; US State Department 2009), and by extension, the national health care systems of the countries in which the Cuban doctors serve. From 2000 to 2001, after the creation of central and sub-regional disciplinary commissions, no acts of "indiscipline" were reported to those commissions (BMC Ghana 2006). Nevertheless, within the same year there were three evacuees (out of a total of 14) who were sent back to Cuba with disciplinary reasons cited but not specified (ibid).<sup>20</sup>

However, in Ghana the efforts of the U.S. to entice Cuban doctors with the additional incentives of a fast track into the United States, as of the close of 2007, appear to have been fruitless. There was no mention or report of any defection, or evidence of any unplanned decline in Cuban personnel in any of the documents by the brigade or embassy. An earlier document from the BMC in Ghana (2006) covering through 2001 stated that there had been no desertions and that the migratory policy between the two countries has been maintained. The Cuban brigade must also comply with the norms established for all Comprehensive Health Program volunteers. These norms include a commitment of up to two years to work in areas that do not interfere with the practice of

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<sup>20</sup> The others were said to have gone home for either family concerns or illness (BMC Ghana 2006).

local physicians, the required presentation of the documentation of their credentials as qualified medical personnel, to provide services without regard to race, creed or religious background and respect local laws and customs (CubaCoopera 2010).

The BMC must also follow norms of the Sanitary Control Program that include compliance with public health and travel back to Cuba (such as medical checkups and examinations) from Ghana as well as to regions within Ghana known for higher incidence of malaria according to “Law 104”. They must be up to date on all of their vaccinations, keep track of their clinical history while in Ghana, and upon their return to Cuba must declare any and all symptoms of illness, follow up with their own family physician within 72 hours of their return to Cuba, continue malaria prophylaxis for a specified period, undergo an anti-malarial treatment and follow up after 3 and 6 months (BMC Ghana 2007).

Due to the risks inherent in performing surgeries on patients who are HIV positive or whose HIV status is unknown, the BMC must follow hygienic and epidemiological norms. Several recommendations for reducing the risks of transmission were listed in the 7<sup>th</sup> volume of *100% Cubanos*, a newsletter that was distributed among the members of the BMC Ghana from March of 2007 until August of 2008. These recommendations included ensuring sufficient access to protective sanitary materials for their work, ensuring that all volunteers have had appropriate training concerning safety during operations, and exhort the development of activities that clearly explain the epidemiological situation of the country as well as the hygienic and epidemiological norms (BMC Ghana 2007).

Cuban volunteers to Ghana must overcome various language and cultural hurdles in their quest to provide their inhabitants with medical care. The first challenge is the difference in official languages, since Ghana was colonized by the British and has English as its official language while Cubans speak Spanish. This is further complicated since Ghana is a nation with many different ethnic groups, the three largest of which are the Akan, Dagomba, and Ewe, along with various languages the BMC must adjust and learn enough

to be able to both adapt to their new surroundings as well as to communicate clearly with their patients.

As in other countries, members of the Cuban brigade have made conscious efforts to familiarize themselves with some of the basics of the languages where they serve. In Ghana, they have become familiar with 17 dialects (BMC Ghana 2008). Certainly there will be variance in local language learning among the brigade, and the level may not be one of conversational fluency, or may simply be limited to asking questions regarding the person's health. Also, local staff tends to help out here as well. In my (the author's) experience as a Peace Corps volunteer in The Gambia, I witnessed a Cuban doctor attend a Mandinka patient ask a series of questions like "*I ka totoo le bang? I ka fonoo le bang?*" meaning, "Do you cough? Do you vomit?" In addition, as further evidence of the presence of this component there was a presentation by Dr. Sabino Miranda and Dr. Oraidia Duque at the Teaching Hospital in Tamale, Ghana in 2007 that covered the importance of the medical interview, and some basic phrases to use in Dagbani, a language that is common in the Northern region (Miranda and Duque 2007).

### *Serving Where Most Needed*

In the section on Ghana's health care system, some brief information was given about the concentration of Ghana's health care physicians in urban areas. How does the BMC in Ghana compare with distribution of Ghana's health care professionals? Are they going where they are most needed, or do they instead concentrate in wealthier areas where doctors already tend to be concentrated? Even though Cuba has not sent to Ghana the quantity of doctors that they have to Venezuela, the data reveal that their impact is highly significant in terms of improving accessibility due to their strategic placement within Ghana.

If the BMC members are placed in mostly underserved areas, a higher concentration of them should be evident in rural as opposed to urban areas, in areas characterized by higher poverty incidence, and in areas with a shortage of personnel. The areas with the most acute problems, as revealed in the table below, tend to be in the Northern part of the

country such as the Northern, Upper East and Upper West regions. Conversely, there should be a lower concentration of medical personnel in the Greater Accra and Ashanti regions.

*Table 4a. Regional Accessibility Table showing distribution of Cuban and Ghanaian medical personnel by region, etc.*

Region	% Rural	% of pop. in poverty (1999) <900,000 cedis	% of Cuban personnel	% of Ghanaian Doctors (MOH)	Est. Pop. 2007 (MOH)	Ghanaian doctor (only) per population (MOH)	Cuban + Ghanaian doctor per population
<b>Ashanti</b>	47	28	13	25.5	4,565,683	10,667	10,101
<b>Brong Ahafo</b>	63	36	10.3	5.7	2,157,949	22,479	18,765
<b>Central</b>	63	48	13	3.8	1,843,403	129,260	21,189
<b>Eastern</b>	NA	44	7.6	7.6	2,322,029	18,141	16,352
<b>Greater Accra</b>	12	5	7.6	45	3,927,879	5,202	5,108
<b>Northern</b>	8 persons /km <sup>2</sup>	69	12.5	1.4	2,209,100	92,046	47,002
<b>Upper east</b>	87	88	7.6	1.8	993,317	33,111	22,575
<b>Upper West</b>	83	84	9.8	.9	648,797	43,253	19,661
<b>Volta</b>	73*	38	16.3	3.9	1,865,730	28,269	19,435
<b>Western</b>	NA	27	2.2	4.2	2,399,348	33,794	31,991
<b>TOTAL</b>			100	100.0	22,933,234	13,683	13,506

Data compiled from Brigada Medica Cubana” Ghana 2007, Ghana Ministry of Health 2009 Ghana Statistical Service 2000

\*data from Ghanadistricts.com, an urban locality is defined as having a population of 5,000 or more

NA – data not available

**Table 4b. Mortality and Nurse Ratios in Ghana**

Region	Infant Mortality Rate per 1000 live births 1998 *	Infant Mortality rate 2003*	Child Mortality per 1000 1998 *	Child Mortality 2003*	Population per Ghanaian Nurse(2007)
<b>Ashanti</b>	42	80	78	116	2,024
<b>Brong Ahafo</b>	77	58	129	91	1,099
<b>Central</b>	83	50	142	90	1,476
<b>Eastern</b>	50	64	89	95	1,173
<b>Greater Accra</b>	41	45	62	75	979
<b>Northern</b>	70	69	171	154	1,868
<b>Upper east</b>	82	33	156	79	1,243
<b>Upper West</b>	NA	NA	NA	181 (WHO)	1,208
<b>Volta</b>	54	75	98	113	1,266
<b>Western</b>	68	66	110	109	1,993
<b>TOTAL</b>					1,451

Source: Ghana Ministry of Health (2007) \*Ghana Statistical Service (2003)

At first glance when looking at Tables 3a, one can see that Cuban medical personnel are not concentrated in the capital or in the Ashanti region that has the country's second largest city (which we will examine more closely below). A total of 55 Cubans (or 30% of Cuba's total) labor in the Northern, Upper East and Upper West regions, noted for extreme shortages of Ghanaian doctors. Only four percent of Ghanaian physicians work in said regions, while 45% labor in the Greater Accra region and 25.5% work in the region of Ashanti.

It is also notable that there were more Cuban Medical Personnel (18) than Ghanaian doctors (15) in the Upper West region of Ghana. This improved the total ratio from 1 doctor for every 43,253 to 1 doctor for every 19,661 inhabitants of the region. Also the difference made by the presence of the Cuban doctors in terms of number of inhabitants

per doctor in the Northern region (the region with the highest number of inhabitants per doctor) is quite salient since it drastically reduced the number of people per doctor from 1: 92,046 to 1:47,002. These numbers are reinforced by the results an Index of Dissimilarity test<sup>21</sup> which indicates that the differences in the spatial distribution of Cuban and Ghanaian doctors is 52% of the maximum possible. This means that in order to achieve identical spatial distribution, more than half of the doctors would have to move to another district.

When examining patterns across the 10 regions, there are several significant positive correlations: percent living in poverty and the percentage living in rural areas ( $p < 0.01$ ), child mortality and poverty ( $p < 0.01$ ), child mortality and ruralness ( $p < 0.05$ ). In addition, infant mortality and child mortality in 1998 were significantly correlated with each other ( $p < 0.01$ ).<sup>22</sup>

There are also significant negative correlations between the percentage of Ghanaian doctors in a given region with poverty incidence ( $p < 0.05$ ) and ruralness ( $p < 0.01$ ), and infant and child mortality rates in 1998 ( $p < 0.05$ ), implying that there is a greater need for them in other regions. There were no significant correlations between the placement of the Cuban doctors and or other indicators, suggesting a much more even spatial distribution.

The Pearson correlations and the index of dissimilarity demonstrate that Ghanaians are much more likely to work in regions that are more predominately urban and that have a lower incidence of poverty. Our tables and correlations demonstrates that Ghanaians are much more likely to serve in the more urban, wealthier areas, and that the Cubans are more evenly distributed, and do not avoid areas of higher poverty or greater health need. Only 25% of Ghanaian doctors work in regions of poverty incidence greater than 30%, while 77% of Cubans do.

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<sup>21</sup> Index of dissimilarity =  $\frac{1}{2} \sum (r_{2a} - r_{1a})$ .

<sup>22</sup> There were no significant correlations between the child and infant mortality rates of 2003 with any of our indicators.

This strongly suggests that the placement of the Cuban doctors is based on meeting the needs of the underserved and disadvantaged sections of the Ghanaian population.<sup>23</sup>

The accessibility component of Cuba's assistance to Ghana would be enhanced if in the event that the BMC sent more doctors to the Western region especially if and when they grow the size of the brigade.

As of 2009, Ghanaian graduates of tertiary level education were not required to perform national service in rural areas or partake in the National Service Scheme. This has recently changed to require doctors to perform one year of national service in rural and underserved areas. The extent of the impact on improving the population's ability to access health care services is not yet known, but the hope is that it will improve the current situation (Daily Graphic 2009).

The Cubans are working in regions that are primarily rural; out of 184 working, only 38 are within the regions that hold the two major cities, Accra and Kumasi. Twenty out of 24, or 83% of members of the BMC in Ashanti are assigned to more rural areas in villages outside of Kumasi. This evidence reinforces the claim made by the Cuban government that Cuban doctors go where they are most needed and is further evidence that the BMC works in areas that do not interfere with the practice of local physicians.

*Table 5: Breakdown of Cuban Placement in Ashanti Region*

<b>Location</b>	<b>Number of Cuban Personnel</b>	<b>Urban or Rural?</b>
Yeji	2	Rural
Ankase	2	Rural
Bekwai	1	Rural
Boamang	2	Rural
Effiduase	2	Rural
Mampong	3	Rural
Offinso	2	Rural
Atwima Mponua	2	Rural
Ejura	2	Rural
Kotwia	2	Rural
Asafo	4	In Kumasi, urban

Source: BMC Ghana 2008

The other part of the accessibility component refers to the absence of significant cost barriers to obtaining medical care. The Cuban doctors in Ghana (and elsewhere in the Comprehensive Health Program) work for a stipend (of usually 150 to 200 US dollars) food, and living quarters provided by the host country, meanwhile they continue to receive their regular salary in Cuba paid for by the Cuban health ministry (MEDICC 2010). Thus, the Cuban doctors serving abroad do not charge their patients for their services. Cuban doctors in the Comprehensive Health Program perform their services free of charge to their patients (Gorry 2006). It must be noted here that the Cubans do not operate separate clinics, but work within the public health care institutions of the country of service. Thus, those institutions would still levy fees that would be normally charged by any particular public institution in which the Cuban medical personnel are serving.

#### *Preventative and Curative Components*

Our program appropriateness model indicates that in order for the assistance to more fully address the needs of the Ghanaian population, that there should be both preventative aspects of the program as well as the curative functions to address immediate needs. The Cuban medical brigade in Ghana performs activities that can be classified as preventative, curative and still others that can be classified as research. These include major and minor surgeries, births, c-sections, writing prescriptions,<sup>24</sup> laboratory and radiological examinations, field visits, community outreach and vaccinations. In addition, various papers were presented at scientific conferences in Ghana covering research undertaken by the BMC and their Ghanaian counterparts. The research component will be discussed more in the next section.

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<sup>24</sup> No data available on prescriptions written, but certainly this is part of their daily activities as the author witnessed in Gambia.

During 2007, the brigade reported performing 14,375 operations and 10,535 major operations, assisted in 11,473 births and 4,121 cesarean sections. According to another document released by the BMC in Ghana, from May 2006 to April 2007 the BMC performed 20,853 general surgeries and 8,094 gynecological-obstetric surgeries and 6,102 surgeries from other specialties (BMC 2007).

The curative activities performed by the brigade are also broken down into the cases seen by cause of morbidity within children under one year of age, between one and four years of age, and chronic, non-transmissible illness for adults (see Table 5). Between May 2006 and April 2007 for the age group of under one year, the BMC in Ghana saw a total of 26,584 cases for that age group, the most prominent of which were 4,128 cases of malnutrition followed by 2,841 of malaria. When we look at the 1-4 age group for malaria, we can see that the number of cases increases dramatically to 88,031, highlighting the fact that malaria represents a significant threat to the population and a significant drain on Ghana's health resources. Also notable for those between 1 to 4 years is the presence of illness due to intestinal parasites. Of the cases for adults, arterial hypertension was the most seen (24,587 cases), with obesity being the second largest (10,508) during the same period.

*Table 6. Cases Seen by BMC Ghana between May of 2006 and April of 2007*

<b>Type of Morbidity</b>	<b>Number of cases seen for children under 1 year</b>	<b>Number of cases seen for children between 1 and 4 years</b>	<b>Total</b>
<b>New Born</b>	2,059	NA	2,059
<b>Malnutrition</b>	4,128	3,587	7,715
<b>Diarrhea</b>	2,301	6,387	8,688
<b>Anemia</b>	2,567	5,724	8,291
<b>Malaria</b>	2,841	88,031	90,872
<b>Intestinal Parasites</b>	None reported	4,921	4,921
<b>Total</b>	26,584	107,948	134,532

Source: BMC Ghana 2007

In order to perform the activities listed above, the BMC in Ghana relies primarily on general medicine practitioners (92 out of 184) but they also have within their ranks an epidemiologist, 12 specialists in internal medicine, 14 pediatricians, and 14 gynecologists. For the more complex procedures, the BMC also has 6 surgeons, 2 intensive care specialists, a cardiologist, and an anesthesiologist. The Brigade also has a nephrologist (kidney specialist), a radiologist, 5 dentists, a physical therapist, 2 orthopedists, 25 technical personnel, a professor, a laboratory technician, a “teaching secretary” and one head of the mission.

The BMC in Ghana also engages in numerous activities that could be classified as preventative in nature. These include 8,825 vaccinations<sup>25</sup> given by the BMC in 2007 (91,764 in 2006), and things classified as field-work by the BMC including health education activities reported as 231,248 in 2006 and 245,352 in 2007 and home visits (22,360 in 2006 and 245,352 in 2007). The BMC in Ghana performs a number of activities HIV/AIDS preventative activities, such as radio and TV talks that include basic information about HIV/AIDS, its methods of transmission and how to avoid infection (BMC 2008, 2007).

Examples of the BMC’s outreach to the community occurred on July 28<sup>th</sup> 2008 and on July 26<sup>th</sup>.<sup>26</sup> On June 28<sup>th</sup>, seven members of the BMC located in the Greater Accra Region, in the Labadi suburb of Accra, together with the Global<sup>27</sup> Evangelical Church, and The Havana Club Foundation<sup>28</sup> (that supplied free vitamins and medicine to cases that were deemed necessary<sup>29</sup>) performed a day of community work. During the day, the

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<sup>25</sup> Although the BMC documents do not specify, it is likely that the vaccine that the Cubans are administering is the Penta 3 discussed earlier.

<sup>26</sup> Probably 2008, but the year was not reported.

<sup>27</sup> Perhaps they mean World Evangelical Church (WEC).

<sup>28</sup> The Havana Club Foundation is an organization described by the BMC as a non-profit organization of young pharmacists who graduated in Cuba.

<sup>29</sup> The BMC specifies that as far as adults were concerned, those with chronic diseases such as hypertension and diabetes as well as those with malaria were prioritized when it came to receiving the free medicine.

BMC attended 320 patients, mostly children, who received general physical and oral examinations (BMC 2008).

On July 26<sup>th</sup>, members of the Cuban Brigade in all regions engaged in community outreach. In the Northern region, the BMC traveled to 8 remote villages during the outreach, while the Ashanti and Greater Accra brigades met at the Oblogo community where 616 cases of various maladies including typhoid fever, malaria, malnutrition, anemia, asthma, and arterial hypertension were attended (BMC 2008).

### *Capacity Building*

In addition to providing immediate care and engaging in preventive and educational activities, the BMC in Ghana is involved in the formation of new generations of Ghanaian doctors and nurses. One of the strategies mentioned in Connie Field's (2006) film "Salud!" for reducing brain drain during a discussion on the creation of the Walter Sisulu medical school in South Africa was that those people trained from underserved communities will be more likely to serve within those communities. Table 6 highlights the numbers of people who have become, and are in the process of becoming Ghanaian doctors, nurses and technicians by region.

**Table 7. Breakdown of Educational Formation Provided Ghanaian Nationals by the Cuban Medical Brigade**

Region	Doctors	Nurses	Technicians	Studyin g medicin e	Studyin g nursing	Assista nt physicia ns	Foreign students	Others	Total
Ashanti	0	469	64	3	469	23	3	1	1,032
Brong Ahafo	13	131	13	4	156	14	0	2	333
Central	9	140	23	66	187	0	58	36	519
Eastern	5	127	2	18	179	10	6	7	354
Greater Accra	0	30	10	0	0	0	0	25	65
Norther n	0	71	0	8	117	18	0	0	214
Upper East	0	91	8	15	89	5	0	10	218

*Table 7 (continued)*

Upper West	0	155	3	10	126	8	0	8	310
Volta	0	207	22	0	258	30	0	60	577
Western	0	32	0	0	54	3	0	0	89
Total	27	1,453	145	124	1,635	111	67	149	3,711

Source (BMC 2008)

In Table 6, although by the end of 2007 there were only 27 doctors who have graduated, all were from areas outside of the Greater Accra and Ashanti regions (some from those regions are currently studying). Also noteworthy are the 33 students (26.6%) studying medicine from the areas identified as having the most severe doctor shortage - Northern, Upper East and Upper West. Those same regions have already produced 317 nurses (roughly 22% of the total studying nursing), and 31 (roughly 28%) assistant physicians. Although the nurse/inhabitant ratios throughout Ghana are not as severe as the doctor/patient ratios (see Table 4b), they are still not at the 1:1000 minimum level recommended by the WHO. Over 83% of all those trained or studying are nurses or nurses to be.

As a way of building capacity within the program, the BMC in Ghana also provides its volunteers with the opportunity of post-medical school education, and the opportunity to further specialize. This is organized by the teaching secretary of the brigade and counts on the collaboration of four members of the brigade who teach with about 50 professors coming in from outside. The 2007 document revealed that 88.2% of 162 BMC members who have the opportunity to continue are currently doing so.

An additional form of capacity building is reflected in the scientific workshops, presentations and papers (and reported by the BMC) done by joint Cuban/Ghanaian doctors and scientists of issues concerning Ghanaian health care and maladies that effect the Ghanaian population. These include papers presented on obstetric fistulas, haemodialysis complications, typhoid fever in Bawku hospital, as well as studies on tuberculosis, malaria, anemia and educational intervention in AIDS patients (BMC 2008).

### *Ghanaian Reception*

The people and government of Ghana have recognized the BMC's work in many ways. Perhaps most notably was the awarding of the Order of the Great Medal to two Cuban doctors (Dr. Gicelin Estrada Rodríguez and Dr. Hector Jesús de León) in 2008. These two Cuban physicians were the only doctors working in Bawku, Ghana, at a time when all others had abandoned this area because it was suffering from ethnic conflicts, under curfew and Ghanaian military occupation at the time (BMC 2008).

In 2005, Ghana's Deputy Minister of Health, Mr. Samuel Owusu-Agyei, praised Cuba and the BMC in Ghana for their efforts in community outreach, curative and preventative activities, scholarships to Ghanaians to study medicine in Cuba. He also highlighted the willingness of Cuban doctors to go to remote areas in Ghana, particularly the Northern region. Mr. Owusu-Agyei stated that the BMC in Ghana would continue to receive the full support of Ghana's Ministry of Health (Ghana Web 2005). In June 2009 the Minister of Health in the Northern region, Mr. Stephen Sumani Nayina, commended the BMC of the same region, and that the region "would be in a sorrow (sic) state without the services provided by the Cuban doctors" (Ghana News Agency 2009). Ghana's vice president, Alhaji Aliu Mahama, made a request in 2007 for Cuba to increase the number of physicians serving in Ghana to 200. This is clearly a reflection that he is pleased with their efforts and would like to see the assistance expanded (Bizcommunity.com 2007).

### *Conclusion*

The first part of this chapter involved examination of the state of the Ghanaian health care system, its structure, and the challenges it faces in terms of disease burden and human resources. Ghana still has unacceptably high infant and child mortality rates, problems that are more severe in the Northern regions where there is also a severe shortage of medical personnel. Ghana's physicians tend to concentrate in the wealthier urban areas. In response, the Ghanaian government has implemented various strategies to encourage physicians to work in shortage areas, such as the Deprived Areas Income

Allowance (DAIA) program. These challenges have also encouraged Ghana to seek outside assistance such as that provided by the Cuban Medical Brigade.

In the second half of this chapter, the nature of the Cuban assistance to Ghana was examined in relation to a 'program appropriateness' model that constituted the framework for examining the various components of the Cuban medical assistance, primarily focusing on the accessibility, preventative and curative work and capacity building components. Our findings support the conclusion that the approach taken by the BMC in Ghana is context appropriate and attempts to address some of the inequities in health care provision in Ghana as evidenced by the placement of the Cuban medical personnel in mostly rural areas that tend to be characterized by higher poverty and extremely insufficient doctor to patient ratios. While this is perhaps one of the strongest aspects of the program one can point to, the doctor to patient ratios are, even with the presence of the Cuban Medical Brigade, far from adequate. If the number were even increased slightly, it appears the shortages of physicians within the Western region could be somewhat alleviated by a few reinforcements. Nevertheless, it is clear from the findings that the placement of the Cuban medical personnel in Ghana both corresponds to need and optimizes their potential in terms of improving the populations' ability to access medical care through a needs responsive distribution.

The BMC in Ghana takes a holistic and primary health care approach to addressing health and disease in Ghana as supported by the various days of community outreach, educational talks on disease prevention, vaccinations and home visits in addition to the essential work performed on the curative end, including complex operations and treatment of disease. Finally, the BMC and Cuban assistance to Ghana's health care system goes beyond improving accessibility, preventative and curative work and includes a significant capacity building component helping Ghana to prepare future generations of doctors, nurses and other essential medical personnel.

## Chapter 5: Final Conclusions

This thesis was introduced with reference to the overall situation of health care provision in the Global South, with particular focus on sub-Saharan Africa. The costs of implementing neo-liberal policies on health care services were briefly examined and some national and international efforts to address harsh realities were discussed. Next, the Cuban health care system was described as an example of a national approach to providing health care within a context of resource scarcity. Then, the experiences of Cuban medical internationalism in South Africa, Equatorial Guinea and The Gambia were discussed.

The investigation continued with an analysis of Ghana's health care system and the challenges that it faces. This involved discussing its structure, disease burden, vaccination strategies, and placement of health care facilities, as well as the external and internal brain drain which corrodes Ghana's human resources for health. Cuban assistance to the Ghanaian health care system was then examined through a program appropriateness model, revealing that Cubans go where they are most needed, provide preventative and curative care, and contribute to the formation of future generations of Ghanaian medical personnel.

The collaboration of the BMC in Ghana fits well into the general context and history of Cuban medical internationalism and the struggle to improve the quality of health care and health care access for the world's poor. The Ghanaian experience shows that like in other countries such as South Africa, Honduras, Equatorial Guinea and the Gambia, the Cuban Medical Brigades are willing to travel to the most remote, underserved and impoverished regions of the world to provide medical care. The Cuban experience also fits well into the overall discussion about the importance of primary health care and the debate between contrasting paradigms for health: one which holds it as an essential human right and the other which views it as just another commodity.

Cuba's medical internationalism is a significant and often underreported component of the efforts to reduce global health inequities. Cuba's efforts both in Ghana and elsewhere have earned the Cuban medical brigades and the government of Cuba the goodwill and recognition of Ghana and other nations across the Global South, as evidenced by the various recognitions of Cuban medical internationalism as well as continual votes in the UN General Assembly for the Cuban resolutions condemning the US economic blockade on the island (UN GA/10877).

#### *Suggestions for Further Research*

Further research could be done to examine the extent of the effect of resources (both human and material) of Cuba's internationalist medical missions are having on human resources within the Cuban Health System in Cuba, if any. James Petras and Robin Eastman-Abaya (2007) have underscored the need for Cuba to find a balance between meeting the needs of their own citizens and combating resource scarcity at home with Cuba's medical internationalism. These conclusions deserve to be further investigated, both in terms of the extent of their validity as well as to what degree the return of significant numbers of Cuban medical personnel back to Cuba would mean for improvements in the Cuban health system- and measured against the health costs that would be endured by the current recipient nations if the Cuban medical brigades were to suddenly return home. More research could also be done to examine the extent to which those health personnel trained through medical schools established by the Cuban Medical Brigades and ELAM graduates tend to fulfill their commitments and serve in the areas where they are most needed.

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### Appendix 1: List Of Acronyms

ADHA	Additional Duty Hour Allowance
BMC	<i>Brigada Médica Cubana</i> (Cuban Medical Brigade)
BMCGE	<i>Brigada Médica Cubana de Guinea Ecuatorial</i> (Cuban Medical Brigade of Equatorial Guinea)
CDR	<i>Comité por la Defensa de la Revolución</i> (Committee for the defense of the Revolution)
CHAG	Christian Health Association of Ghana
CHN	Community Health Nurse
DAIA	Deprived Area Income Allowance
DOSH	Department of State for Health (Gambia)
DRC	Democratic Republic of Congo (Kinshasa)
EPI	Expanded Program on Immunization
FMC	<i>Federacion de Mujeres Cubanas</i> (Federation of Cuban Women)
GNHS	Ghana National Health Service
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HIPC	Heavily Indebted Poor Countries
IFI	International Financial Institutions
IMF	International Monetary Fund
MEDICC	Medical Education Cooperation with Cuba
MINSAP	<i>Ministerio de Salud Publica</i> (Ministry of Public Health Cuban)
MINREX	<i>Ministerio de Relaciones Exteriores</i> (Ministry of Foreign Relations Cuban)
SNS	<i>Sistema Nacional de Salud</i> (National Health System Cuban)
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
PAHO	Pan-American Health Organization
PIH	Partners in Health
PHC	Primary Health Care
PRSP	Poverty reduction Strategy Papers
SAP	Structural Adjustment Program

TBA	Traditional Birth Attendant
UN	United Nations
UNDP	United Nations Development Program
VHN	Village Health Worker
WHO	World health Organization

## **Appendix 2: The Gambian Health Care System: Challenges, Structure and Strategies**

The Gambia has a three tiered health system (Department of State for Health and Social Welfare-DoSH&SW 2008) consisting of the following:

1. Tertiary care composed of four hospitals (the most recent developed from a major health center in Bwiam) on the tertiary level. The Medical Research Council in Fajara established by Great Britain also may fall in this category.
2. Secondary care of Basic Health Service (BHS) is responsible for much of the maternal and outpatient services and is composed of seven major health centers, eleven minor health centers and eighteen dispensaries on the secondary level. Some surgery is conducted at the major health centers, as are maternal and infant care, some laboratory testing and pharmaceutical services (Grant). The minor health centers provide maternity services, admit patients and may perform eye surgery (ibid). Finally the dispensaries may see patients, but unless there is no way to get a patient needing a higher level of care to a higher-level facility, they do not formally admit them (ibid.) The public care is complimented with a combined total of 34 private and NGO clinics (WHO 2005).
3. Health posts (492) around the country on the primary level (DoSH&SW; WHO 2005).

The Gambian health system is primarily managed by the Department of State for Health (DOSH) and central decision-making authority has traditionally been based within that organization. However, the Gambia has been attempting to decentralize its authority delegating many administrative and managerial responsibilities to the Divisional Health Teams (DHT) that are in charge of BHS and VHS in Gambia's six divisions. The Gambia also seeks to improve the management of the operation of the public health care system that is disjointed. To address the troubles with communication, linkages and

effective management they increased the resources and training allocated to Divisional Health Management Teams, Hospitals, BHS and VHS (DOSH 2001).

The Divisional Health Teams are comprised of a hierarchy of public health officers, Divisional Public Health Nurse, a senior CHN, administrator, accountant, pharmacist and support staff. The DHTs supervise the Village Health Service (VHS) that provide primary health care at the village level (WHO 2005; Grant). The Village Health Workers (VHW) and Traditional Birth Attendants (TBA) staff the VHS and are supervised by Community Health Nurses (CHN) that report to the DHT. In addition Cuban doctors are posted at some of the Primary Health Care villages within the VHS (Grant).

The Gambia has ample need to produce more resources and shift both human and material resources towards the primary and secondary levels of care. Due to inadequate staffing at primary and secondary levels of care, places like Royal Victoria hospital in Banjul become overburdened with referrals for ailments that under better staffing conditions, could be treated at lower levels. In spite of these inequities the government remains the primary health care provider to Gambia's population (WHO 2005). Primary Health Care became the basis of Gambia's national health care policy in 1978, prior to which the hospitals in Banjul and Basse took up more than 70% of Gambia's health care budget (Hill et al. 2000). More recent data indicates that figure is much lower, at 40% for primary and secondary care of total government expenditure on health (WHO 2005).

Gambians faces significant disparities in access to health care due to poverty and location. The majority of the health centers and facilities are located in urban areas, primarily in the Kombo areas. Thus "The health status and health services indicators in Banjul, Kanifing Municipality and Western Division are better than the national averages, while Upper River and Lower River Divisions are substantially worse. Central River Division has indicators whose levels are between the above two extremes" (WHO 2005).

The Gambia was ranked 155 on the human development index in the 2007-2008 period (UN 2008) but has since dropped to 168 (UN 2009). Life expectancy at birth remains low at 58.8, although there has been some improvement from past decades (ibid)<sup>30</sup>. The Gambia recognizes poverty as one of the principal root causes of the health challenges the country faces. In addition, the poor in The Gambia (in 1998 64% of the population was listed beneath the poverty line) suffer disproportionately from inadequate access to health care and are forced to spend a large percentage of their income to access services (WHO 2005).

Data presented in the Changing For Good policy framework (compiled from poverty reports) indicated that disparities between urban and rural poverty had grown significantly from 1992-1998. In 1992 urban poverty (including poor and extremely poor) was at 40% with rural poverty at 41% (although this number hides a greater portion of the rural population listed as extremely poor). By 1998 urban poverty had risen to 62% and rural poverty to 9% poor and 71% extremely poor (DOSHS 2001).

The Gambia's population continues to increase, with a net growth rate of 2.77% as of the 2003 census and a total fertility rate of 5.35 births per woman (DOSHS 2009). The net increase in population puts a growing demand on the health system and on the country's resources, and the net increase will continue to rise as improvements in reducing infant and child mortality are realized. This phenomenon reflects the cultural lag inherent in the population's response to improvements in health care (by reducing the fertility rate as more children survive) and is typical of societies in which new advances in health care and sanitation are made. The fertility rate remains the same in the face of improvements in health care overall and decreased mortality (Curry, Jobu and Schwirian 2008).

### *Challenges*

The Gambia faces many significant challenges in terms of its population's health care. In 2005, according to the United Nations Human Development report, The Gambia had an infant mortality rate (number of infant deaths per 1000 live births) of 97 and an under-

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<sup>30</sup> In 1973 it was listed as 33 years of age, in 1993 at 53 (WHO 2005).

five mortality rate of 137 (per 1000 live births). In contrast, the world averages are 49.4 and 43.52, respectively (UN 2008). However, according to the 2006 UN revision the infant mortality estimate for 2005-2010 period is only 74.2 and under-five mortality is 128.1 (UN 2007). Of these numbers malaria accounts for about 6 deaths per thousand for infants and about 10 for children under 5 (WHO 2005). A modest trend of some improvement in the mortality rates is evident if one considers the numbers in earlier years.

Nevertheless, mortality rates in the Gambia are among the highest in the sub-region. Infant mortality in 1993 was estimated at 84, a significant decline from 167 in 1983. Under-five mortality declined from 260 in 1983 to 129 in 1993 (Jaiteh 2007; WHO 2005). In addition, a disparity remains between infant mortality and under-five mortality between the urban and rural areas of the Gambia, with Lower River Division having the highest incidence and Banjul (the capital city) with the lowest (ibid.). The Gambia still has a very high maternal mortality rate, 703 per 100,000 births in 2001, down from 1,050 in 1990 (WHO 2005).

The Gambian government has outlined several strategies to lower these mortality rates. The Gambia works closely with UNICEF, WHO the World Bank and others in order to address the causes of infant and child mortality. A principal strategy to address this problem has been to extend immunizations to cover the entire target population through the Expanded Programme on Immunization (EPI), however it has declined from 80% in 1996 to about 68% of that population (WHO 2005; DOSH 2001). DOSH (2001) identified waning support from donors as one of the factors leading to the decline as well as an out-dated and inadequate cold chain system and insufficient storage capacity for vaccines. The Gambia seeks to improve accessibility of medication to its population, improve training for health personnel, improve ties with local communities and augment their participation in health care programs (WHO 2005; DOSH 2001).

To address the health care challenges The Gambia faces, it has approximately 1 physician per 10,000 people (UN 2008), out of all of the physicians working in Gambia as of 2005

only 18 were Gambian nationals with 80% in the higher level facilities (WHO 2005). In part, this is due to the push and pull factors which contribute to the brain drain that operate internally and externally. Physicians, nurses and other health personnel are pushed away from working in the rural, poorer underserved areas by poorer pay, inadequate equipment, supplies and infrastructure and tougher living conditions and are pulled into the more urban areas by the higher standard of living that it offers. The siphoning from the public to private sectors and NGOs follows the same push and pull factors as does the flow of personnel from The Gambia to wealthier nations and sectors with less absolute need but more ability to pay (ibid.).

To give an example of the challenges facing the Gambian public health care system, Reed estimates that in regard to malaria “100% of the country’s 1.4 million people are at risk, and nearly 40% of hospital deaths among children and pregnant women are due to malaria” (Reed 2005). In addition to malaria Gambians suffer heavily from respiratory infections, parasites, and diarrhoeal infections, combined these illnesses account for half of the demand placed on the public health care system in the Gambia (WHO 2005).

Many of these diseases like TB, are a result of or are exacerbated by poor living conditions, the environment, and endemic poverty of the region. The Gambia can address many of these concerns with improvements in the quality and accessibility of clean potable water, and confronting environmental factors. As of 1996 access to safe water in Gambia reached 69% of households country-wide (79.9% urban and 64%.9% rural), with a disparity in access to “sanitary facilities” covering 83% of those who live in urban areas compared just 17% of those who live in rural areas (DOSH 2001).

On the primary health care level the village health workers, (VHW) community health nurses (CHN) are working to increase their ties and coordination with traditional healers such as “*tijmutalaalu*” or traditional birth attendants (TBA). The Gambia’s current strategy takes into account the roles played by TBAs bonesetters, spiritualists and herbalists in local communities and works towards integrating them in the formal health care system. The goal is to encourage the traditional practices that have been proven to

be medically sound and engage in further research in those treatments that have not. Additionally, since traditional healers are many Gambians first point of contact when ill, it is important that they become integrated into the larger public health system and are able to make necessary referrals (WHO 2005).

Gambia has put a lot of focus and energy into primary health care. Hill et al. (2000) collected data from forty villages near the town of Farafenni located on the northern bank of the Gambia River to review the effectiveness of the primary health care strategy. They conducted a longitudinal census starting in 1981 and ending in 1996. Of these villages 15 were primary health care villages and 25 were non-primary health care villages. The authors document that the majority of the study population are subsistence farmers, highly polygynous, very poor (less than 10% of compounds owned bicycles), that they were all in close proximity to one another and were members of the Mandinka, Wolof or Fulani tribes. Their data were collected from the Farafenni Demographic Surveillance System originally gathered by “itinerant field workers and resident village recorders” in order to provide mortality estimates and make comparisons. One of the significant challenges faced by the authors of the study was the seasonal nature of deaths in the Gambia. This was influenced by the rainy season increasing the quantity of mosquitoes spreading malaria (Hill et al. 2000).