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The Health Workers Crises In Cameroon

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ABSTRACT

The physician's crisis in Cameroon has reached an alarming stage and has the potential to worsen existing health problems including the attainment of millennium development goals. This report emphasized the challenges faced by Cameroonian physicians, and recommended alternative solutions to the current government health workers policies. The report was done through a review of articles and documents covering the topic.

At the center of the physician's crises in Cameroon is the discrepancy between financial, social and professional expectations and what the government offers. The analysis showed that, there is a general dissatisfaction, despite some corrective measures implemented by the government. This suggests that the government needs to aggressively adopt and implement aggressive retention policies, such as improving the remuneration and working conditions of health workers. Beside, there is also need for innovation by adopting and implementing solutions that have been successful in others countries. As in many other countries, establishing powerful unions and lobbying groups by Cameroon physicians may help in negotiating acceptable working conditions that could help in alleviating the challenges of Cameroonian physicians.

Despite some limitations, this report can be useful for policy-makers in the formulation of effective human resources for health policies but also to draw attention to the need to publish more on human resources for health issues in Cameroon.

Keywords: *Physician, crises, challenges, Cameroon*

Health workers crises in Cameroon

By

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M.D, Faculty of Medicine and Biomedical Sciences, Yaoundé, Cameroon

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2010

HEALTH WORKERS CRISES IN CAMEROON

By

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To my family and friends in Cameroon and all over the world.

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Chapter one

Introduction

1.1. Background and Statement of the problem

Also called ‘Africa in Miniature’, Cameroon is a country in Central Africa (Map1) in which almost 90% of the African ecosystems are represented. It is situated in the Gulf of Guinea, extending from the Atlantic Ocean in the south to Lake Chad in the north. The Country is rich in natural, agricultural, forestry, water and mining resources (PRSP, 2009). The population of Cameroon is estimated at 19, 294,149 inhabitants (CIA fact book, 2010) and the majority of the population (70%) according to the CIA fact book (2010) is employed in the agriculture sector. Cameroon is made up of various ethnic groups. The largest group is the Cameroon highlanders who comprise 31% of the population. Other major groups are the Equatorial Bantu (19%), Kirdi (11%) Fulani (10%) and the Northwestern Bantu (9%).

The largest urban agglomeration and Capital city is Yaoundé. The official languages are French and English. The life expectancy at birth for males is 53.2 years and for females is 54.9 years (CIA, fact book 2010).

1.1.A. Overview of the country and the health system

The epidemiologic profile of Cameroon is dominated by transmissible diseases of which the prevalence of diseases tends to increase over time (WHO, 2009); the leading causes of death in Cameroon includes: HIV/AIDS, lower respiratory infections, malaria, diarrheal diseases , perinatal conditions and cerebro-vascular diseases (WHO, 2006). There is a deterioration of the indicators of mortality according to the results of the EDS III (Enquête Démographique de santé, 2004). The non-transmissible diseases and the traumatisms are in recrudescence in the country, because of the changes in lifestyles including changing patterns of food practices in urban areas (WHO, 2009).

The Cameroonian national health system consists of various public and private entities, institutions, and organizations that provide health services, under the regulation of the Ministry of Public Health (MoPH, 2010). The principal provider of health care in Cameroon is the public sector, however there is also a private sector (faith-based and for profits), and an overwhelming presence of traditional medicine, and the Chinese traditional medicine.

Since 2006, Cameroon is a SWAP (Sector Wide Approach) country. SWAP is a new initiative that is supposed to facilitate donor harmonization and coordination to fund health. The objectives of the SWAP are to update the health sector strategy for 2001-2010, bringing it to 2015, in accordance with the Millennium Development Goals (MDG).

The Cameroonian health system is pyramidal with three levels: Central (strategic),

intermediary (technical) and peripheral (operational). The country has 178 health districts, with 162 districts hospitals among which only 154 are operational. Additionally, Cameroon has 2043 public medical structures, mainly concentrated in urban zone (MoPH, 2010).

Human Resources for Health (HRH) at least on the paper are decentralized (Ministère de la Santé Publique, 2009), however some authors like Ngufor (1999) criticized the highly centralized management of the human resources for health by three ministries .The Ministry of Public Service responsible for conditions of services, the Ministry of Finance pay salaries and the Ministry of Health deals with staff management.

1.1.B Past history of health workers in Cameroon

The World Health Organization (2006) defines the health workforce as “all people engaged in actions whose primary intent is to enhance health”. Cameroon as most developing countries has extensively used public resources to support health systems (Gupta and Dasgupta, 2000). However, because of the recessions in the 1980s and early 1990s, there was a decline in the resources available for financing publicly provided services, including health. The human resources for health (HRH) crises in Cameroon date back from the early 1980s where the government reform was initiated (Ngufor, 1999). This reform was a part of the Structural Adjustment Program (SAP) administered by the World Bank and International Monetary Fund (IMF). The Structural Adjustment

Program of the 1990s resulted in significant restructuring in the public service with negative effects on education; social services and health sectors (Sanders *et al.*, 2004).

SAP had a negative impact on the health sector as recruitment within the public sector was frozen for 15 years. Moreover, the devaluation of the local currency in the 1994 led to a decrease in the purchasing power and difficulties in tax collection by government with deleterious consequences on the regular payment of salaries (Anonymous, 1998). This situation favored the out-migration of health professionals, including academics and researchers from the public to the private sector, and from Cameroon to rich countries (Hyder *et al.*, 2003). The SAP implemented an early retirement at 50-55 years; restricted employment years to no more than 30 years, suspended of any financial promotion; reduced benefits such as housing, travel expenses, implemented a salary reduction of 50% and implemented a currency devaluation resulting in an effective income loss of 70% over 15 years (Ngufor, 1999). Government personnel complained that payment of allowances had also been discontinued and advancements halted (Israr *et al.*, 2001). The overall effect was dramatic on the health sector in general and on health workers in particular. In 1999, the health sector budget decreased to 2.4% of the national budget, from 4.8% in 1993 far below the 10% recommended by the World Health Organization (WHO, 1993). Although the public sector work used to be rewarding, working conditions were difficult and frustrating, and salaries remains chronically low, especially compared to readily available private work and the many opportunities that were available overseas.

Physicians are a key group to ensure a well-functioning health care system as they bear the role of central leader of the health care team and chief caretaker of patients. In Sub-Saharan Africa, the importance of medical practitioners is underscored by the population poor-health status. In fact Sub Saharan Africa bears 24 % of the global burden of diseases (WHO, 2006) while it has only 3% of the world health workers (Map 2) commanding less than 1% of world health expenditure. Meanwhile the Americas have 37% of the world's health workers and more than 50% of the world's health financing (World Health report, 2006). This figure represents a critical deficit of more than 1 million of health workers in Africa. The current workforce needs to be scale up by 140% in other to overcome the crises (Bowen and Zwi, 2005). Anand and Baernighausen (2006) indicated that the crisis depicted a serious obstacle to the achievement of the Millennium Development Goals (MDGs). The Millennium Development Goals adopted in 2001 by the United Nations members is an initiative aim to spur development by improving social and economic conditions in the world's poorest countries.

There are only 1,555 physicians in Cameroon, representing 0.8 physicians per 10,000 inhabitants (Ministère de la santé publique, 2009). In other words, there is only one doctor for 12,500 people. This ratio is one of the lowest in the world (World statistic, 2010). According to Scheffler et al., (2008), Cameroon will need 10, 447 physicians on average, in 2015. However the physician supply in Cameroon is only projected to reach an average of 822 physicians by 2015. The need for more health professionals is enormous and the challenges are greater because of the double burden of infectious and chronic diseases and the growing population.

Cameroon is presently facing a growing crisis in the medical field due to an acute shortage of qualified personnel, especially medical doctors (Abena Obama et al., 2003, Kollo, 2007). The causes for the shortages of health workers are multi-factorial including brain drain to the private sector and other countries, low salaries, poor working conditions and insufficient training capacities (Windisch, 2009).

Medical doctors in Cameroon are not only poorly paid but work under the most incredible conditions especially in the rural areas (Kollo, 2007). Nevertheless, the Cameroon's health politic remains inadequate to meet the challenges the nation faces. Physicians have been and continue to be a neglected component of the health-system. Health budget in Cameroon have always won the record of being negligible. In 2010, almost 40 years after David Morley (1993) criticized the government's health allowance of "two dollars health budget", the budget allocated to the Ministry of Public Health (MoPH) still stand out by his skeletal appearance and represent only 5% of the Gross Domestic Product (GDP), this despite the multiple prescriptions of the World Health Organization (WHO) and the African Union to allocate at least 10 and 15 % respectively of the government budget (World Bank, 1993).

To compensate for unrealistic low salaries and harsh working conditions certain Cameroonian physicians chose to migrate to developed countries (Abena Obama et al. 2004). Others that remained in the country rely on what have been reported elsewhere as "predatory behavior" or coping strategies" (Ngufor, 1999; Ferrinho and Van Lerberghe, 2000; Di Tella & Savedoff, 2001; Israr et al., 2001; Van Lerberghe, 2002). Such attitudes are characterized by: under-the-counter fees, pressure on patients to attend private consultations, sale of drugs that are supposed to be free.

Available literature consistently reports that many African health professionals are dissatisfied with their current situation (Hagopian et al., 2005; Abena Obama, 2003; Raviola, 2002). A number of surveys and qualitative studies have examined reasons why doctors migrate or consider migrating out of their countries of origin. In Nigeria and Ghana, the common reasons for dissatisfaction were delayed salaries; delayed promotions, lack of recognition, and their inability to afford the basic necessities of life (Hagopian et al., 2005). These factors were associated with health professionals migrating to greener pastures. In Kenya, Raviola et al. (2002) found that working in an environment characterized by poor communication among hospital staff as well as a lack of resources and high numbers of patients with HIV/AIDS negatively affected significantly the residents' perceptions of themselves. In Ghana, Dovlo (2005) reviewed the strategies for enhancing motivation and morale of health workers. Dovlo (2005) found that difficult working conditions were associated with health workers adoption of what Ferrinho and Van Lerberghe's (2001) paper described as "predatory behavior" or "coping strategies". Alongside, Israr et al. (2001) described these "coping strategies" in Cameroonian health workers during the economic crisis in Cameroon.

Studies done in Cameroon regarding the challenges that face the health workforce are scanty. Ngufor (1999) has analyzed the effects of government reforms, namely the structural adjustment program (SAP), on the health workforce in general and focused on coping strategies. Abena Obama et al. (2003) found that recruitment (28.6%), desire to gain experience (28.6%) and better remuneration (26.6%) were the major reasons for emigration. Takougang et al. (2002) highlighted some disincentives for young health researchers including low wages, lack of recognition of their work.

Ndiwane's (1999) focused on nurse's job satisfaction in the North West province of Cameroon. He found that the low salary negatively affected job satisfaction in nurses and the time spent in the job. Also Awasum (1993) and Fongwa et al. (2002) have reviewed the challenges and demands of nurses. Although research were indentified and carried out for Cameroonian nurses, to our knowledge no studies have solely been focused on the challenges that face the Cameroonian physicians of the public sector.

1.2 Research question

Fundamental questions regarding the problems Cameroonian physicians' face remain largely unanswered. Guillozet in 1976 asked, " Will it be possible to assure an effective distribution of physicians to posts at which the need for a physician is evident but where the professional and social aspects are inadequate to meet his and his family's needs?" Further, Fendal (1974) asked, how to solve "the dilemma of an elegantly trained physician posted in an inelegant environment"? Although both authors while recognizing the hardship conditions of working, focused solely on the imbalance on the distribution of physicians, this report is designed to answer the question: "why Cameroon physician's are dissatisfied" by reviewing the key challenges they faced during their training and career.

The specific objectives of the study are threefold. The first objective was to determine the challenges that physicians face during their training and career. The second objective was to identify and analyze the reasons for migration of physicians and factors that motivate physicians to remain in Cameroon and the third objective was to recommend appropriate strategies to improve the conditions of physicians.

1.3 Impact of the study

While recognizing the physician shortage in Cameroon, the quintessence of this report was to delineate substantive information on the conditions in which physicians are deployed and managed in order to increase the retention and decrease the motivation difficulties. We also proposed some solutions to overcome the crisis. The report hinged on three main axes. First, we started with an overview of the Cameroon health system and provided background on the health workforce. Second, we examined the current state of the Cameroon physician workforce and analyzed the challenges they face by focusing on education, training, wages, distribution and retention. The last part of the document proposes some solutions to the crises. This report will not extend to other health professionals, such as pharmacists but will merely focus on Cameroonian physicians of the Public sector. The findings of this report can be useful for policy-makers in the development and the formulation of effective health policies for physicians and overall to strengthen the health systems in Cameroon.

Chapter two

Methodology

This report reviewed and synthesized published and unpublished literature on the health workforce in Cameroon, with a particular focus on working and living conditions of physicians. We developed a search strategy combining the following search terms: "physicians" AND "crises OR motivation OR migration OR incentives OR retention OR challenges" AND "Cameroon". Using these terms, we searched the following databases from the beginning to July 2010: Human resources for health websites and journals including the *Bulletin of the World Health Organization*, *Health Policy and Planning*, *Human Resources for Health*, the documents and the website of the Ministry of Public Health in Cameroon, the World Bank reports, the Africa Observatory for Human Resources for Health. A complementary search was made using Google Scholar. In addition, a snowballing approach was used to identify potential articles from the reference lists of relevant articles already identified. Our report included all articles that detailed challenges faced by physicians, other health professionals and also those that focused on recommendations. Abstracts were initially screened. We included articles

both in French and English. No time limitation was included in our search due to the dearth of information. Therefore this report presents a narrative synthesis of the findings of the identified studies.

Chapter three

Physician Crises in Cameroon

3.1 Current Situation of the health workforce

The website of the Cameroon Ministry of Public Health accessed on July 2010, outlined the role of the Director of the Human Resources (DRH) as follows: to implement the human resources management policy, to address the general recruitment problems and to ensure the relations with the Ministry in charge of Public Service and Administrative Reforms (MINFOPRA) and the Ministry of Finance (MINEFI). In addition, the DHR addresses the problems related to staff mobility, File keeping, the monitoring of initial and continuing training programs of personnel other than physicians, the monitoring of staff's career, the preparation of elements of salaries in collaboration with the services concerned and the Ministry of Finance.

A research group on human resources for health in Cameroon (GRESAC) was created by decision of the Minister of Public Health of Cameroon in March 2010. This group is part of the National Health Workforce Observatory of Cameroon. Its mission is to develop

research projects on human resources for health and facilitate the dissemination of research results conducted on HRH.

Despite these efforts aim at improving the health workers' conditions, yet the physicians in Cameroon are faced with many challenges that seemed to be beyond their control. In a survey by Israr et al. (2001), Cameroonian government health personnel described their situation as 'disastrous', 'deplorable', 'frustrating' and 'very painful'. Some of the most commonly cited reasons of discontent are unsatisfactory working conditions characterized by heavy workloads, lack of professional autonomy, lack of continuing education opportunities, amount of work; lack of proper equipment to carry out the procedures among others. In the following section, we dissected in nine points the main problems and issues that Cameroonian physicians face.

3.2. Key Challenges of Cameroonian Physician

3.2.1 Cumbersome Bureaucracies

The involvement of three ministries namely: the ministries in charge of Public Service and Administrative Reforms (MINFOPRA), the ministry of finance (MINEFI) and the Ministry of Public Health (MINSANTE) for the integration of physicians as civil servant made the whole integration process complex and confusing (Ngufor, 1999) for the newly medical graduate. There is a procedure followed by the MINFOPRA, which allow the handling of files to determine qualification and integration of medical doctors (MDs). The procedures can take months because integration official papers are only signed by

the services of the prime minister. The files are transferred to the MINEFI and analyzed for released of salaries. These bureaucracies are cumbersome, and unnecessary stressful for the medical personnel.

3.2.2 Low Salaries

Health workers in the Cameroonian public sector are paid fixed monthly salaries that do not provide productivity incentives. “We have to live at a low standard compared to the status we hold. This is degrading” said a medical doctor in a study done in Uganda and Bangladesh (Ssengooba and al., 2007). The situation is similar in Cameroon where new medical graduates earn about 140,000 FCFA (about \$300) (Kingue, 2009) per month. Ssengooba et al. (2007) warned that unrealistically low wages could lead to unethical behavior, demoralize and foster malpractice. Also, Dovlo (1999) demonstrated the strong link between salary level and motivation or retention. After the economic crises of the 1990s, government health workers in Cameroon were often found to skip meals, eat low quality food, reduce social activities, and use second-hand clothes to compensate for very low wages (Israr, 2001). “Predatory” or “Unethical behavior” is rampant. For example, at l’ *Hôpital Laquintinie de Douala*, located in the economic capital of Cameroon, some young men called “les démarcheurs de malades” or “tacleurs” or “racoleurs” were often posted at the entry of the hospital, to divert the patients either to a specific doctor or to the private clinics. According to Dr. Fritz Ntonè the former director of l’hôpital

Laquintinie this phenomenon is worrying and poorly impact the activity of the hospital (Tatchuem, 2004).

3.2.3 Training and Continued Medical Education

Of the six WHO regions of the world, Africa has the lowest number of medical schools per population (WHO, 2006). In Cameroon only four Faculties of Medicine exist; the oldest and the most prestigious popularly referred in French as “*Centre Universitaire des Sciences de la Santé*” (CUSS) existed for over 30 years. CUSS is only able to accept 85 medical students annually out of over 1,300 young qualified applicants made up of both Cameroonians and foreigners. Each year, the number of candidates seeking admission greatly exceeds the number of available openings. Since, 2000 three other medical schools have been created (MNESUP, 2010). However the quantity of the physicians produce do not often meet the demand and the quality of training prescribed by the Cameroonian Medical Council particularly. The country’s schools of medicine of medicine are yet unable to meet internal demand (Kollo, 2007).

To maximize medical proficiency, doctors should continuously be abreast of medical technology through continuous Medical Education (CME). The lack of continuous medical education was the first cited barriers to the use of evidence-based health in the Northwest Cameroon (Tita et al, 2005) and therefore may impact negatively the quality of care.

Besides the lack of CME, physicians who held the position of health district managers are too often not adequately trained as highlighted by Okalla and Vigouroux (2009) who estimated that less than 20% of physicians district managers have professional training in health management.

3.2.4 Lack of Concrete Policy for Career Advancement

There are no clear policies in place in the Ministry of Public Health (MoPH) for furthering a career. The system of promotion was characterized by Ngufor (1999) as often unclear and lack transparent standards, discouraged some young doctors. In a study exploring the factors affecting motivation of health workers, Cameroonian health professional's wages were found to be below the "lack of promotional opportunities" (Awases et al. 2003). In a study in the Fiji, Moulds and Usher (2009) found that the problems associated with "career structure" contributed heavily to the dissatisfaction of physician and their migration decisions.

3.2.5 Lack of Social Benefits

Aside from basic salary, physicians in Cameroon lack social allowances and welfare benefits to compensate for the low wages (Kingue, 2009). Young doctors are sent to work in rural areas and must find their own accommodation (Ndumbe, 2006). Moreover,

physicians in Cameroon lack health insurance as Pr Kingue (2009), the current human resources for health director at the Ministry of Public Health (MoPH) complained.

3.2.6. Overwork Burden

“Cameroon without Doctors by 2009” was the title of one article of the volume 43 of the Africa research bulletin in 2006. This article pinpointed the shortage of medical doctors that faces the health sector in Cameroon. Moreover, “There are just 1,000 doctors working in the health sector, if you take out those doing administrative jobs, teaching or research, that leaves between 600 and 800 to carry out all the clinical duties” said Pr Tetanye Ekoe (Anonymous, 2006).

Looking back into the history of medicine in Cameroon, a Harvard professor of pediatrics who also held appointment at the Faculty of Medicine said the *“Cameroonian physician are trained to be super doctors who can teach, plan, supervise paramedical personnel, carry out ongoing preventive medical programs and public health endeavors, and a super clinician for the medical and surgical problems that surpass the skills of the many others in the team who will deliver the bulk of direct medical care.”*

At the district levels, health information staff should normally be accountable for data collection, reporting and analysis; however such tasks are often given to the overburdened physician. The physicians at the district levels see these supplementary tasks as unwelcome additional work that detracts from their primary role (Okalla and Vigouroux, 2009).

Cameroonian physicians see approximately 50 patients a day, and earns about \$US 450 a month (MINEFI, 2010). Disappointed by the poor working conditions health professionals are moving to the private sector and to other countries where their skills are rewarded better (Abena Obama et al., 2003). This migration phenomenon resulted in understaffed services and therefore overburdened health providers.

3.2.7 Migration of physicians

Beine et al. (2006) rank Cameroon as one of the top 30 countries most affected by high rates of medical migration. Pr Tetanye Ekoe, vice president of the Cameroon Medical council in an interview with the national newspaper, *the Cameroon tribune* (2006), revealed that, about 25%-30% of professionals trained in the country are working abroad while 70-80% of Cameroonians trained abroad do not return home after their education. He argued that more Cameroonian doctors are working abroad than at home; at least 5,000 currently worldwide, with about 500-600 in the US alone, according to the MoPH (2006).

Several studies established the relation between the migration and low wages. In Cameroon, Abena Obama *et al.* (2003) found that 49.3% of the Cameroonian health professionals declared their intention to migrate and low wages was the second most important factor for their choice. The findings were similar in other countries (Vujicic *et al.* 2004, Dovlo, 2004, Awases *et al.*, 2004; Clarck *et al.*, 2006). In a Nigerian and

Ghanaian study (Hagopian *et al.*, 2006) respondents characterized medical degrees as “the tickets to enter countries where physicians can earn about 13 times the income they enjoy at home”.

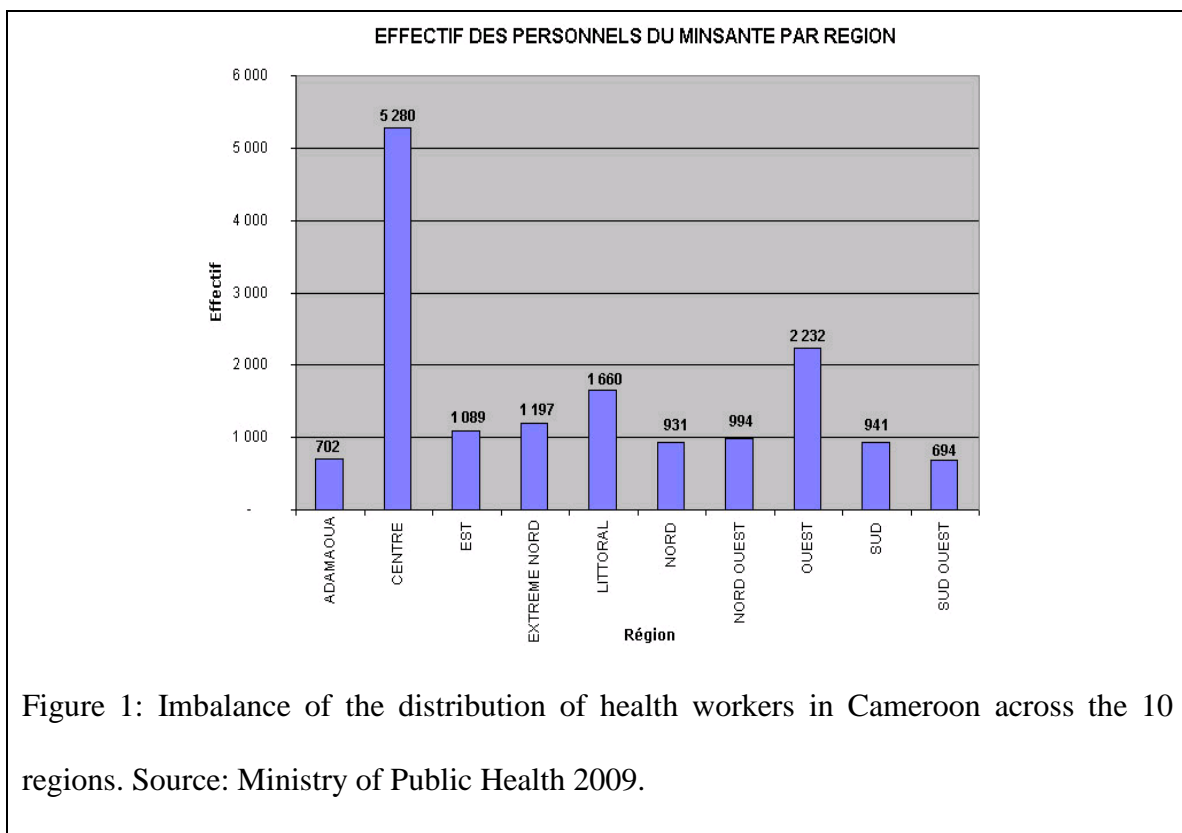
The former ministry of Public Health (MoPH), Urbain Olanguena Awono commented that Poor countries like Cameroon are in a competition with the richest countries of the world, which has also an important requirement for agents for health (Essogo, 2006).

Classically migration is provoked by a growing discontent or dissatisfaction with existing working and or living conditions, the so-called “push factors”, as well as by the existence of better jobs with prospect of better remuneration elsewhere, what have described in other studies as “pull factors”(OECD, 2010). Takougang *et al.* (2006) pointed out that, the status and the “prestige” associated with the title of medical doctor have its inconveniences. Moreover, they argued that the family circle which is extended to cousins and uncles and any member of the village put a lot of pressure mainly financial to the shoulder of physician, this might create indirectly a disincentives for living in resource limited setting. Finally, migration contributes to the overwork burden and put more pressure on physicians that remained in the public sector (Awases, 2003).

3.2.8 Imbalances and Poor Distribution

At present, essential specialists such as ENT (ear nose, throats) surgeons, cardiologists, neurologists are basically concentrated in the cities of Yaoundé and Douala (MoPH, 2009). This concentration of specialist in the two capitals of the country impedes equity in administering healthcare to the entire nation. The causes of this imbalances may be due to the fact that the staff is old (Fig.2) and recruitment to the civil service was stopped for

all categories of health professionals outside the medical graduates of the Faculty of Medicine and Biomedical Sciences (FMSB) of the University of Yaoundé I. These imbalances affect certain region like the Far North, the most populous of the country with a ratio of 1 physician for 50,000 inhabitants (Tetanye Ekoe, 2006). The imbalance in the distribution of health workers in Cameroon is depicted on figure 1. The center region of Cameroon where the capital is located has the highest number of health workers. On the contrary, the Adamaoua region has about 8 times a lower number of health workers.



3.2.9 Lack Of Equipment /Inadequate Working Facilities

Physicians in Cameroon are often faced with facilities severely under-supplied and lacking in medicines and proper medical equipment.

“ I will give a chance to the country by returning, however if I don't have the equipment necessary to perform all the neurosurgical skills that I have acquired in Switzerland for 7 years, I will go back to Switzerland. In fact the hospital where I work had offered me a position'. My problem with the Cameroon is that they under utilize our knowledge, our potential”

This statement is an extract from a discussion with a Cameroonian colleague who is actually in training in neurosurgery in Switzerland. We didn't receive any permission to display the name of the doctor here. However, this is not an isolate case. Many Cameroonian physicians leave the country to further their study in a field that might be available or not in the Faculty of Medicine of Yaoundé I, but upon their return, many of them find that their skills are needed, but nonetheless useless because of a chronic absence of suitable material to carry out the advanced procedures for which the professionals were trained (Bundred and Levitt, 2000). The performance and the quality of care therefore suffer. The lack of adequate technology stands as a big impediment to the Cameroonian medicine to be competitive and to overcome the challenge of the modern medicine. This assertion is verify in the study by Tita et al. (2004) in the North West region of Cameroon, who found that the lack of necessary supplies was felt by many health workers to impede their use of evidence-based medicine and basics medicine

. These factors that go beyond the doctor capacities unfortunately negatively affect the quality of care given to Cameroonian. Dovlo (2005) used the term "wastage" to refer to the loss in utility of health workers/health professionals due to attrition or poor productivity that can be prevented or managed and that is over and above what is expected in normal work situations.

In radiology, for example, it is only recently that certain public hospitals were equipped with MRI (Image by magnetic resonance), whereas private cabinets possessed it more than a decade ago. When the adequate materials exist there is a problem of sustainability in the long run (Carter, 2004). Carter argued that the materials are not adequately maintained because of the lack of technician qualified in the field.

In summary, the physicians in Cameroon faced many challenges that are most of the time beyond their control. In the next chapter we will make some recommendations to improve this crises situation.

Chapter four

Some Recommendations

At the center of the health worker crises in Cameroon are a huge discrepancy between the MDs financial, social and professional expectations and what the public service offer. The analysis of the challenges faced by the Cameroonian physicians in the previous chapter showed that, although doctors were generally dissatisfied, there were opportunities for enhancing work satisfaction and care provision. The Cameroonian government has started corrective measures, but these need to be strengthened and be as comprehensive as possible. There is also a need for innovation to consider other solutions that have been found to be helpful in others countries. In this section, some recommendations are offered on the conditions within the physician's work environments that enable and encourage them to stay in their profession and in the country. For each strategy proposed, actions government to overcome the dissatisfaction of health workers.

4.1 Financial Strategies

4.1.1. Government Salaries Increase

Cameron government seems to be reluctant to invest in the health services, however doctors may not be paid like other civil servants. In order to retain physicians at the workplace and in the public health sector, it is necessary for the government to make health a priority by raising wages (Obama et Nko'o, 2002; Kollo, 2007; Kingue 2009). Some efforts of the MoPH are notable; the government encourages the return of medical doctors who further their studies abroad by paying their salaries while away from the country. Also, working for the Ministry of Public Health of Cameroon is a permanent job, which can be considered as important as it provides a stable income.

In Cameroon, salaries already absorb about 80% of the MoPH's budget (Ministère de la santé publique, 2010); hence a significant increase in the pay of health sector workers may prove to be difficult due to other national health demands. When health workers are adequately paid, the fight against corruption may become feasible, and may increase the retention and the motivation of health workers. Fongwa, (2002) proposed that, the public sector should offer competitive salaries and other incentives so as to reduce the migration of health professionals to the private sector. Pr Tetanye Ekoe, the dean of the Faculty of Medicine in Yaoundé said, "The Government has to make a choice. And since no country can do without its health service, particularly medical doctors, for me the choice is very obvious". This implied that if Cameroon's government were to genuinely tackle the crises in the health sector, they would have to adjust wages.

For Dielman (2003) most incentives that were developed were focused on improvement of payment and of working conditions, often with the expectation to improve performance. In a study of retention of health workers in Thailand, Wibulpolprasert and Pengpaibon (2003) reported that, a non-private practice allowance of US \$ 400 per month was given to any doctor in the public service who agreed not to engage in private practice. Dielman (2003) gave an indication that although financial incentives are important; they are not sufficient to motivate personnel to perform better. To achieve better staff motivation, attention should also be paid to incentives that focus on showing appreciation and respect. Put aside the salary, there should be a general increase investment in the health sector that should match the 15% recommended by the African Union (2005).

4.1.2 Alternatives to the Government Salary Increase

The revenue sharing system called *quotes-parts* pay in Cameroon is effective in most hospitals. In fact, in hospital like *hôpital central de Yaoundé*, general practionners are paid a monthly sum of 50,000 CFA francs (\$US 110) regardless of the salary of the MoPH. In Douala general hospital, each physician has a based salary of 150,00CFA (US \$ 322) and received additionally 30% of the consultation fees per patient. The more a physician consulted patients, the better the pay was. Additionally, the hospital paid 8,000 CFA francs (about \$US 18) for week duties and 10,000 CFA francs (\$US 22) for the weekend's duties. Additionally the hospital offered a temporary one bedroom and

bathroom duty place for new physicians called “case de passage”. Unfortunately the situation was not always similar for all the hospitals. Douala general hospital can be an example for others hospitals to emulate. However, this current revenue sharing system called *quotes-parts* is limited in scope, focusing primarily on hospitals and not to other physicians working at the central level of the MoPH. In Ghana, the quote part system can be equivalent to the “Additional Duty Hours Allowance” to considerably augment physician pay for direct patient care and have been credited with reducing the migration to a small extent (Hagopian et al., 2005).

4.2 Non Financial / Social Strategies

Studies have shown that motivation is influenced by both financial and non-financial incentives (Mathauer and Imhoff, (2006); Dieleman et al, (2003)). Stilwell (2001) by reference to Zimbabwe, suggested that certain non-financial incentives can have a beneficial effect on motivation, even under adverse conditions of insufficient pay and equipment, understaffing. The study of Kingma (2003) although it was done on nurses but not physicians suggested the relevance of non-financial incentives for nurses' job satisfaction and self-esteem. Mathauer and Imhoff (2006) studied the role of non-financial incentives on the motivation of workers in Africa and found that Health workers in the public sector feel demotivated by the limited realistic prospects of professional progress and personal advancement and the rather slow and cumbersome promotion process.

In Cameroon, incentives and allowances were introduced, including non-monetary incentives. However, these allowances and other benefits were perceived as unequally

distributed between the health professionals and inadequate opportunities for career development and training remained (Obama and Nko'o, 2002). Another important non-financial incentive appreciated by health workers is the appraisal awards system, given to excellent workers in Vietnam (Dielman, 2003). According to Mathauer and Imhoff (2006), the public ranking and public congratulations appear to have a strong effect on health workers. They create competition and provide motivation to perform better. In Cameroon, the award system exists in some hospitals but as Obama and Nko'o's have highlighted, it is perceived as "unequally distributed". The recognition and public congratulation need to be more objective and strengthened. Makasa (2009) suggested other non-monetary incentives like land acquisition or housing mortgages for health workers, which they can pay in a long run and that may keep them in the country for a longer time while they repay. In Cameroon, incentives like the provision of loans for housing and cars and improvement of the social security system to ensure that health professionals will get a decent pension on retirement. In addition, medical assistance should also be provided to the staff, supported by a comprehensive health insurance scheme. In Ghana, civil servants (including most physicians) are typically provided living accommodations in the form of housing and sometimes vehicles (Hagopian et al., 2005). In Cameroon there is a policy that requires that hospitals offer duty houses for the physicians in the rural areas (Angwafor, 2006).

Malawi has initiated sets of incentive to retain health workers. Government incentives include free basic and postgraduate training; a number of smaller incentives, such as free meals in some government facilities for health workers while on duty (Windisch, et al, 2009). Incentives for higher health cadres in the private sector include school fees for

their children, salary top-ups and other allowances such as transport, hardship or duty allowance. Together, those incentives can double the take-home pay. Bradley and McAuliffe (2009) found that factors such as improved communication, accommodation, provision of free uniforms and hot meals for night staff were important for the staff retention. Improving working conditions, however, is more than a mix of adequate salary and the right equipment but it also means developing career prospects and providing perspectives for training.

4.2.1 “Task Shifting”

One of the most popular answers to the overwork burden of physicians has been task shifting or task delegation (Lehman, 2009). The MoPH can strengthen and make more widely available task shifting by upgrading the training of paramedical personnel. Some studies revealed that delegation of tasks, from doctors to non-physician clinicians and nurses (Dovlo, 2004, Moris et al. 2009) can lead to improvements in access, coverage and quality of health services . Lehmann et al. (2009) in their article Task shifting: the answer to the human resources crisis in Africa? concluded that task shifting holds the potential of enabling countries to build sustainable, cost-effective and equitable health care systems. In Mozambique the introduction of "tecnico de cirurgia" was accepted as a temporary successful solution to a critical problem of scarcity of human resources for health (cumbi et al. 2007).

4.2.2 Administrative solutions

By decision of the Minister of Public Health of Cameroon (2010), a research group on human resources for health in Cameroon (GRESAC) was created in March 2010. It is a great step in the resolution of HRH crises in Cameroon. Another solutions to the physician crises by the Cameroonian government were to reopen a training cycle of the Administrators of Health in the administration school, ENAM (*Ecole Nationale d'Administration et de Magistrature*). This track has been reopened with a view to leave the hospital management to specialists, to enable doctors, currently head of all health institutions in Cameroon, to address more of the purely medical aspect and reduce the overall work burden.

Physicians, who are appointed chief medical officer of health districts without any administrative experience, can benefit from special training. Special training proved to be useful in Thailand, where new physicians' managers had to attend management training programs, developed management handbooks and designed innovative activities such as rural doctor journals/newsletters, public recognition for extraordinary performance.

4.3. Retention Strategies

In Thailand, the rapid exodus of physicians incited the government to enforce compulsory contracts with medical students so that they had to perform three years of public work after graduation or face high fines (Wibulpolprasert and Pengpaibon, 2003). Similarly, the World Bank, has made recommendations to tie the access to professional education to a commitment to practice a certain number of years in the country or else to reimburse the real costs of training and to finance professional education through loans to

students that must not be reimbursed when one accepts to work in an under-served area (World bank, 1993). The Cameroonian government should consider giving favorable and competitive student loans to students at entry into health training institutions on condition that the students would be legally bonded to work with Cameroon until they repay back. Makasa (2009) argued that these graduates would have settled into society (married with children) and may be reluctant to leave at this stage because of family responsibilities. We recommend that such measures be adopted and reinforced.

Concerning the brain drain phenomenon, a broad range of social, political, professional and economic factors influenced migration decisions. It is well demonstrated that employment prospects are key factors affecting the migration decision of health care professionals (Vujicic et al. 2004). In reality, several of these factors are beyond the control of policy-makers within the health care sector. For Dr. Kollo, to encourage the return of health workers requires inflecting the position of the international financial institutions that impose limit to recruitments. He proposed a high level political dialogue to enrich the debate (GHWa, 2007). For Regil and Lambert (2004) these measures are not enough and "Developing countries need to try harder to entice their high skilled healthcare professionals back.

“Our young doctors must have the concept of sacrifice. It would be desirable that they integrate a spirit of service, and a culture of solidarity. It is only by this manner that one could retain a certain number of personnel” Pr. Angwafor in an interview with the National newspaper, Cameroon Tribune, April 2006 *(translated from the French version)*. For Pr Angwafor fru III, secretary general of MoPH in Cameroon, the “only”

solution to the brain drain problem is to be patriotic. For him Cameroonian MDs should be more patriotic and be willing make sacrifices for their country (Cameroon Tribune, 2006). However, for a government leader, selling the patriotism angle can be a very simplistic analysis of the problem, which can lead to equally simplistic solutions that may resolve nothing.

It can be concluded from this statement that the government of Cameroon is not willing to take any concrete actions to stop the phenomenon of brain drain. In reality there is almost no realistic government's solution that is really aimed as to address the migration phenomenon. Pr Angwafor (Etoa, 2006) admitted that with the globalization, Cameroon is a weak position to measure up to the developed world and more importantly, for him the practice of medicine should be perceived as sacerdotal "notre travail devrait être perçu comme un sacerdoce". Presenting at an International Dialogue on Migration, Jorge de Regil & Mel suggested, "Governments have to be more open and honest about the reality of migration of human resources for health in the country". Moreover, the government can support the return and reintegration of Cameroonians physicians who have worked or trained in industrialized countries by offering privileges to returnees such as loans for business capital at preferential rates.

Many of the island nations in the Pacific Basin (Feasley & Lawrence, 1998) have elected to train physicians that are afforded only limited credentials in an effort to block the emigration option. Some have proposed a low level medical training to make Cameroonian MDs intentionally unappealing in the industrialized world. "Some colleagues think, in order to retain, we should provide substandard education – only train them to do things they will use in the village" said Pr Ndumbe dean of the Faculty of

Medicine of Buea, but he didn't think this should be a solution in Cameroon, because, the world is now globalize and the same diseases are found all over the world.

4.4. Distribution Strategies

The MoPH implemented several strategies to solve the inequitable distribution of doctors. The government redeployed 1,200 health workers recruited through the Heavily indebted Poor country initiative, called by the French acronym PPTE (*Pays Pauvre Très Endetté*). The first batch of PPTE health workers were posted in immediate needs and overdrawn regions (Kollo, 2007).

Despite these strategies, inequitable distribution of doctors persists (MINSANTE, 2010). But the fragmented and inconsistent and sometimes irrational application of strategies resulted in a system that cannot attract doctors to stay in the rural areas due to strong economic incentives in the urban private sector. Evidence from other countries, such as Mexico, showed that an increased supply of doctors alone would not improve distribution, but would instead create an oversupply of doctors (Suwanakij et al, 1998).

Setting correct incentives in the health sector is important for having the right skill mix at the right place, for addressing geographical imbalances in the distribution of HRH and more generally for improving performance and performance management. The government of Cameroon has attempted to retain and deploy professional staff in rural

areas through a variety of instruments, made rural field experience during medical training compulsory (Guillozet, 1976). It is expected that with decentralization, there will be de-concentration, which is vital if health delivery is to be balanced across the nation. Incentives and other fringe benefits should be offered to health professionals who choose to work in rural areas. Acceptance and appreciation of rural district hospitals and health centre personnel should be continued and further strengthened. Cameroon can emulate the Zambian “rural retention” program, where doctors are given monthly allowances, a one-time payment to upgrade their housing, a car loan after 6 months of service, and a number of work-related incentives—all in return for 3 years of service at a rural facility (Makasa, 2009). Moreover, special hardship allowance should be grant to rural working doctors. This strategy has proved to be successful in Thailand where doctors in the most remote areas received US\$ 500 per month which represents almost three times their basic salary (Wibulpolprasert and Pengpaibon, 2003). An almost similar strategy was adopted in Vietnam where in addition to salaries, government allowances are paid for certain tasks, responsibilities or working in certain geographical areas (Dielman, 2003). Rural recruitment and training in rural district and provincial hospitals should be continuously promoted. Rural recruitment, training in rural health facilities, hometown placement after graduation and limited possibilities for private practice are factors that contribute to the successful distribution of health workers in the Ministry of Public Health (Wibulpolprasert and Pengpaibon, 2003).

4.6. Educational Strategies and training

An important approach to increasing the numbers of health workers in developing countries is the "scaling up" of health professional education and training (WHO, 2006; Chen et al. 2004) including the establishment of in-country and regional specialist training (Connel, 2004). Since 2000, three additional school of medicine have been created to increase the number of MDs graduate per year. The Head of State Paul Biya's 10 February address to the youth said: "the number of physicians trained will increase from 85 to 450 per year". (Cameroon Tribune, 2008). However, the government must find a more concrete solution to the health care crises than simply expanding admissions into the medical school. With the decentralization in Cameroon, the creation of a school of a medical school in each region of Cameroon may reduce the imbalance. For, Wibulpolprasert and Pengpaibon (2003), establishment of regional medical schools is also a good measure for the equitable distribution of health care services and doctors.

The opportunities for professional advancement need to be improved so as to reduce the numbers of professionals moving to other countries for reasons of furthering their studies. Cameroon needs to strengthen basic and postgraduate training, and offering specialization and refresher courses within the country. Postgraduate training in all the medical fields including cardiology, neurology, neurosurgery, cardiac surgery, oncology, and nephrology should be provided to address a continuing dependence on overseas schools, as well as a failure of most overseas-trained specialists to return home. Oman et al. in his article "Specialist training in Fiji: Why do graduates migrate, and why do they remain?" found that local or regional postgraduate training may increase retention of doctors in the Fiji. The government must find a more concrete solution to the health care problem than simply expanding admissions into the medical school.

Formal continuing medical education (CME) has been shown to be good for transferring information but not to lead to changes in individual and organizational performance (Tita et al. 2004). The Cameroon National Medical Council of Cameroon organizes on a yearly basis a medical conference at which selected subjects are presented by colleagues and discussed. The medical conference also provides a space for presentation of scientific works. In general, staff involved in public health benefit from more frequent continuing education.

A strong culture of continuing medical education, attention to career pathways and other sources of frustration, in addition to encouragement to complete training, should increase to train more doctors might reduce the overwork and the ratio of doctors per patient.

Chapter five

Discussion & Conclusion

Our report dealt with the daily realities and the reasons behind the shortage of physicians in Cameroon. According to Vujicic et al. (2004), salary raise was the most important factors cited by 68% of Cameroonian physicians as the best retention factor Cameroon, similar answer rates in Ghana (81%) and Uganda (84%). Boosting salaries is clearly important but is a long-term solution is needed because the salaries have to meet up the inflation (Kingue, 2009). A variety of complementary shorter-term responses must be considered like the reinforcement of “non-wage instruments” in the effectiveness of the resolution of the crises. Besides the salary increase, medical doctors might establish powerful unions that will give them more power to negotiate with the government as in Latin America (Urucullo, 2008).

Scheffler et al., (2008) reckoned that Cameroon might need 10, 447 physicians on average in 2015. However, the physician supply in Cameroon is only projected to reach an average of 822 physicians. Although Scheffer’s study was published in 2008, the data

used in the study dated back from 2003. In 2003, one two school of medicine existed. However two additional state medical schools were created in the capital Yaoundé and in the Southwest province in Buéa. The new schools will bring the total number of graduate students from 75 to 400 each year as announced by the president of the republic of Cameroon in 2006. With these new estimates, the projection of Sheffer *et al.* might lead to different results.

Many of the island nations in the Pacific Basin (Feasley & Lawrence, 1998) have elected to train physicians that are afforded only limited credentials in an effort to block the emigration option. Some have proposed a low level medical training to make Cameroonian MDs intentionally unappealing in the industrialized world. However low standard training f MDs is not an option in Cameroon (Ndumbe, 2006)

Previous studies on health workers in Cameroon focused on the reasons for migrations (Abena Obama et al., 2003), the coping strategies during the economic crises of 1990s (Ngufor, 1999; Van Lebherge, 2001; Ferrhino, 2000; Israr, 2001). This report was the first to our knowledge to examine the challenges physicians face in Cameroon and how to improve their situation.

However the report presents several limitations. One of the weaknesses of this report was the dearth of data. No previous studies have addressed the physician crises in Cameroon. Most of the information used was from the web site of the Ministry of Public Health (MoPH) and the archives of the national newspaper, *Cameroon Tribune*. Relying only on such reports, however, poses the risk of bias problems. The fact that most of the challenges presented derived mostly from newspaper rather than published articles may

not be representative of the realities each physician faced in the exercise of their functions.

This report highlighted the need for more investment in collecting and publishing on a representative sample of physicians across the country for informed decision-making. It is urgent for Cameroonian physicians to write more on their conditions to promote evidence-based decision-making.

Conclusion

The medical profession in Cameroon faces a crisis that may be attributed to the economic crises of the 1990's, low investment in the health sector, and the pressure of international financial institutions. All these factors created a web of challenges that Cameroonian medical doctors faced: low salaries, unsatisfactory working conditions, overwork burden, lack of career advancement and promotion, lack of adequate drugs and equipment which oblige some to migrate.

This report presented five main strategies for overcoming the crises including retention, financial, non-financial, educational and distributional strategies. Salaries have to be increased significantly, fringe benefits and provisions for car and housing should be carefully considered. Working conditions should be enhanced with less bureaucracy and attractive career growth.

REFERENCES

Abena Obama, M .T., Nko'o Amvene, S., Afane Ze, E., Mbuagbaw, J., Ongolo-Zogo, P., Ewane G.F., Ndumbe, P.M. (2003) . La migration du personnel de la santé qualifié dans la region Afrique: Le cas du Cameroun. *Health Science & Disease*, 4, 22-27.

Anand,S., Baernighausen ,T.(2004). Human resources and health outcomes: cross-country econometric study. *The Lancet* 364 (9445): 1603–9.

Anonymous. HEALTH: Cameroon Without Doctors by 2009? (2006). Africa Research Bulletin: Political, Social and Cultural Series, 43(7), 16734B-16736A. Retrieved July 10, 2010, from Research Library. (Document ID: 1101260811).

Atangana, Y. (2006/04/12). Exode des médecins : l’effrayante saignée. Cameroon Tribune. Retrieved from :

<http://www.cameroontribune.cm/article.php?lang=Fr&oled=j13072010&idart=34621&olarch=j12042006&ph=y>

Awases, M., Gbary, A., Nyoni , J., Chatora. R (2004): Migration de professionnels de la santé dans 6 pays : rapport de synthèse. World Health Organization.

Bowen, S., Zwi, A.B. (2005). Pathways to “evidence-informed” policy and practice: a framework for action. *PLoS Medicine*, 2(7):1–14. Retrieved from. http://medicine.plosjournals.org/archive/1549–1676/2/7/pdf/10.1371_journal.pmed.0020166-L.pdf

Bradley,S., McAuliffe, F. (2009) Mid-level providers in emergency obstetric and newborn health care: factors affecting their performance and retention within the

Malawian health system. *Human Resources for Health*:14doi:10.1186/1478-4491-7-14 .
<http://www.human-resources-health.com/content/7/1/14>

Bundred, P., & Levitt, C.(2000). Medical Migration: Who Are the Real Losers? *Lancet* 356: 245 – 46.

Chen, L., Evans, T., Anand, S., Boufford, J., Brown H, Chowdhury, M., Cueto, M., Dare, L., Dussault, G., Elzinga, G.Human resources for health: overcoming the crisis. *Lancet* 2004 , 364:1984-90

CIA factbook.(2010). Retrieved, June 21st, 2010.

<https://www.cia.gov/library/publications/the-world-factbook/geos/cm.html>

Connell J: The Migration of Skilled Health Personnel in the Pacific Region. Manila: World Health Organization Western Pacific Region; 2004.

Cumbi, A., Pereira, C., Malalane, R., Vaz, F., McCord, C., Bacci ,A., Bergstrom, S. 92007). Major surgery delegation to mid-level health practitioners in Moazambique: health professionals perception. *Human Resources for Health*, 5:27.

Dielmann, M, Cuong,V. P, Vu Anh, L., Martineau, T. (2003) . Identifying factors for job motivation of rural health workers in North Viet Nam. *Human Resources for Health*. 2003;1:10. doi: 10.1186/1478-4491-1-10.

Di Tella,. R & Savedoff, W.D. (2001). Diagnosis corruption. Fraud in LatinAmerica's Public Hospitals. Washington DC: Inter-American Development Bank

Dovlo, D., Nyongator ,F.(1999). Migration by graduates of the University of Ghana Medical School: a preliminary rapid appraisal. *Human Resources for Health Development Journal*. 3:40–51.

Dovlo D. (2003) : "La fuite des cerveaux et la rétention des professionnels de la Santé en Afrique", *Conférence sur L'amélioration de l'enseignement supérieur en Afrique subsaharienne, Accra.*

Dovlo, D. & Martineau.T (2004) : "A review of the migration of Africa's health professionals", *Africa working group.*

Dovlo D. Wastage in the health workforce: some perspectives from African countries. *Human Resources for Health*, 2005, 3:6 (<http://www.humanresources-health.com/content/3/1/6>, accessed 11 June 2010).

Ehindi, M. (2010/07/10). Budget 2010 de l'Etat du Cameroun : Allocation des enveloppes Retrieved from <http://www.cameroon-report.com/economie/424-budget-2010-de-letat-du-cameroun-allocation-des-enveloppes.html>

Essogo. A. 2006/04/26). Le Minsanté déplore la fuite des cerveaux. Retrieved July, 13th 2010.<http://www.cameroon-tribune.cm/article.php?lang=Fr&oled=j13072010&idart=34542&olarch=j10042006>

Etoa, M.E. (2006/04/12). "Nous allons organiser des recrutements". Cameroon Tribune. Retrieved from: <http://www.cameroon-tribune.cm/article.php?lang=Fr&oled=j16072010&idart=34631&olarch=j12042006>.

Ferrinho. P., Van Lerberghe, W. (2000). Providing health care under adverse conditions. Health personnel performance and individual coping strategies. *Studies in Health Services Organisation and Policy*. 16, 1-245.

Hagopiana, A., Ofosub. A., Fatusic, A., Biritwumd, R., Essele.A, Harta, G., Wattse, C. (2005). Flight of physicians from West Africa: Views of African physicians and implications for policy. *Social Science & Medicine* 61,1750–60 .

Israr, M.S., Razum, O., Ndiforchu, V., Martiny, P. (2001). Coping strategies of health personnel during economic crisis: A case study from Cameroon [electronic version]. *Tropical Medicine & International Health*, 5, 288 – 92 .

Kayesse.D.(2006/07/21). Administration publique - le règne des rabatteursAdministration. Quotidienn mutations.

Lehmann,U., Van Damme, W., Barten, F., Sanders, D. (2009) Task shifting: the answer to the human resources crisis in Africa?. *Human Resources for Health* ., 7:49doi:10.1186/1478-4491-7-49.

Mathauer, I., Imhoff, I. (2006). Health worker motivation in Africa: the role of non-financial incentives and human resource management tool. *Human resources for Health*. doi:10.1186/1478-4491-4-24 : <http://www.human-resources-health.com/content/4/1/24>

Ministère de la Santé Publique du Cameroun. (2010) . Stratégie sectorielle de santé . unpublished

Ndiwane, A. (1999). Factors that influence job satisfaction of nurses in urban and rural community health centers in Cameroon: implications for policy. *Clinical Excellence for Nurse Practitioners*, 3(3), 172-180

Ngufor, G.F(1999). Public service reforms and their impact on health sector personnel in Cameroon. *ILO/WHO Public service reforms and their impact on health sector personnel: Case studies on Cameroon*. Geneva: International Labour Organization/World Health Organization;

Ndiwane, A. (2003). The effects of practice location and work setting on job satisfaction of nurses. *Clinical Excellence for Nurse Practitioners*, 7(1-2), 27-33.

Nchinda T.C 2002. Research capacity strengthening in the south. *Social Science and Medicine*; 54:1699-1711.

Ngufor, G.F. (1999). *Impact of PSR on health sector personnel Cameroon*. Public service reforms and their impact on health sector personnel Case studies on Cameroon, Colombia, Jordan, Philippines, Poland, Uganda .

Okalla, R., & Le Vigouroux, A .(2009).Cameroon: the reorientation of primary health care to national health development. *Bulletin APAD*,21

Poverty Reduction Strategy Paper (PRSP) for Cameroon. (2009). Progress Report *PRSP*, IMF International Monetary Fund. IMF Country Report No. 08/1

Suwanakij, T., Sirikanokwilai, N., Wibulpolprasert, S.(1998). Supply projection for physicians in Thailand in the next 25 years (1996–2020 AD). *Human Resources for Health Development Journal*, 2:117-128.

Tatchuem,H. (2004/09/03). Hôpital Laquintinie (Douala): chasse aux démarcheurs by Le messenger.

Takougang, I., Ongolo-Zogo,P., Socpa,A. (2004).Incentives and Disincentives for Young Health Researchers in Cameroon. Unpublished.

Tita, A.T., Selwyn, B.J., Waller, D.K., Kapadia, A.S, Dongmo, S. (2005). Evidence-based reproductive health care in Cameroon: population-based study of awareness, use and barriers . *Bulletin of the World Health Organization*, 83, 12-16.

Van Lerberghe, W., Conceicao.C, Van Damme, W., Ferrinho,P. (2002).When staff is underpaid: dealing with the individual coping strategies of health personnel.80(7):581-4. Retrieved, June 28th 2010 online.

<http://dspace.itg.be/bitstream/10390/1606/1/2003shso0411.pdf>

Vujicic, M., Zurn, P., Diallo, K., Adams,.O., Dal Poz, M.R .The role of wages in the migration of health care professionals from developing countries. 2004. Retrieved online July 01st. The electronic version of this article is the complete one and can be found online at: <http://www.human-resources-health.com/content/2/1/3>

Wibulpolprasert,S. & Pengpaibon, P. (2003). Integrated strategies to tackle the inequitable distribution of doctors in Thailand: four decades of experience. Human Resources for Health 2003, 1:12doi:10.1186/1478-4491-1-12

World Health Organization. (2002) La migration du personnel de santé qualifié dans la Région Afrique: le cas du Cameroun. WHO unpublished.

World Health Organization . (2010). *Profil-pays Cameroun*, pp. 1-65.

World Health Organization. (2006) .*The World Health Report 2006: Working Together For Health*. Geneva: World Health Organization; <http://www.who.int/whr/2006>, accessed 10 June 2010.

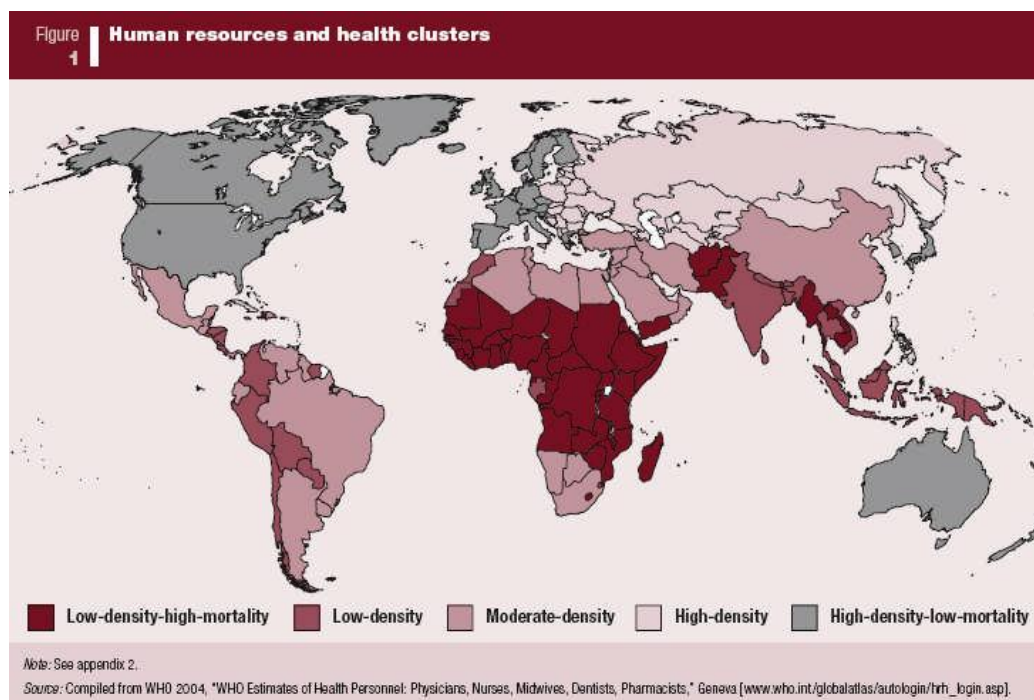
World Health statistics report (2010). World Health Organization publication.

Appendices



Map1: Location of Cameroon in Central Africa

Source: google.com



Map2: Density of health workers and the burden of diseases, source: WHO, 2006

LIST OF ACRONYMS AND ABBREVIATIONS

CUSS	Centre Universitaire des Sciences de la Santé
CME	Continued Medical Education
EDS	Enquete Demographique de santé
ENAM	Ecole Nationale d'Administration et de Magistrature
GRESAC	Research group on human resources for health in Cameroon
MD	Medical doctor
MINFOPRA	Ministries in charge of Public Service and Administrative Reforms
MINSANTE	Ministry of Public Health /Ministere de la Sante Publique
MoPH	Ministry of Public Health
PPTE	Pays Pauvre Tres Endette.
PRSP	Poverty Reduction Strategy Paper PRSP
SAP	Structural Adjustment Program
WHO	World Health Organization