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## Study Abroad Research Context

A couple of months before beginning my study abroad experience in Senegal, I was accepted into medical school through an early application program at Mount Sinai Hospital in New York City. At the time, however, I felt very ambivalent towards beginning a career in medicine. I had always loved the humanities, and I felt that speaking foreign languages and learning about other cultures were some of the most exciting things I could do.

After doing research in Senegal, especially in the rural district of Kédougou, my attitude towards the field of medicine changed dramatically. From the time I spent in the bustling capital city of Dakar, but mostly from the weeks in rural villages of Senegal, I witnessed a level of poverty and a standard of living that I had previously only read about. I had heard about chronic hunger, malnutrition, and high infant mortality, but I did not know what these terms meant on a human scale. In reaction, I went through a number of phases. At first, I was almost in a state of shock and I was overcome with a desire to help — this was what helped me make up my mind to continue on to medical school after returning to New York City. However, after this I slowly entered a phase of disillusionment from speaking with NGO leaders and government health officers in Dakar who cast the problems as too complicated and too entrenched to solve.

Then a more profound change in my thinking occurred; the more time I spent in the villages, the more I realized that, in spite of the periods of hunger, in spite of unsanitary conditions that lead to diarrhea and infant mortality, in spite of the ephemeral access to health care, the vast majority of the villagers are happy. Among other things, the villagers rely on extended family structures that are rooted in rich cultural traditions that provide a resilient system of communal support. I also realized that, in many ways, these communal systems of support are largely absent in our relatively "healthy" American society.

Consequently, I came to the conclusion that I had as much to benefit from and to learn in the rural villages of Senegal, as the villagers had to benefit from any improvements in health that modern medicine could bring. In other words, I came to believe that for any health or development project to be successful, it must have a comprehensive cultural understanding, it must acknowledge its own limitations

and the limitations of human nature, and perhaps most essentially, it must approach the communities they are trying to help with a profound respect and consideration. Yes, I want to pursue medicine; health is a fundamental and essential human need. However, now, I will begin my medical career as a means to access and appreciate other cultures and ways of living, rather than as an end in itself.

The methodology for my research consisted mainly of primary research in the rural district of Kédougou, but it also included a significant amount of time in Dakar (about three months). In the capital city, I conducted interviews with NGO leaders, health officials, and I visited hospitals and health centers which helped me to clarify the overall structure of health care and the nature of the main health problems in Senegal. The majority of these interviews were in French; however, many lay people, and fewer NGO leaders, did not speak French, and I conducted a small number of interviews in Wolof. I also had access to several libraries in Dakar, and I relied heavily on internet sources.

In Kédougou, however, the vast majority of my research consisted of direct, interpersonal interactions. I lived with the chief of a village for a week where I participated in daily chores and visited the fields where the villagers farmed. I also stayed with a Peace Corps worker in another village for a couple days. And I lived in the *centre de santé* (health center) in the town of Kédougou for a week. At the *centre de santé*, I also relied on more formal research methods, such as surveying patients, interviewing the health personnel, and reviewing the administrative documents of the *comités de santé* (health committees).

My results reflect the largely informal nature of the research methodology. I found that interacting as much as possible with the individuals in all of these different communities provided the most interesting and useful insights into the issues of primary health. The result was a cross-section not only of the main health issues, but also of the way of life in the district of Kédougou. I discovered many health problems: malaria, childhood diarrhea and dehydration, poor maternal and child health, malnutrition, cumbersome administrative management, and crushing poverty; however, my results also explore the cultural, social, and economic factors that underlie these problems. In this way, the principles of primary health care as they are defined in the Declaration of Alma-Ata are reaffirmed through my results. Namely, not only is basic health a serious national, and international responsibility; but, perhaps more fundamentally, improvements in health require the complete involvement of the communities concerned. Indeed, the most basic result and overriding impression that I imparted from my research, was that a comprehensive understanding of the cultural factors involved and a deep respect for the people of the communities concerned is a prerequisite for attempting to solve public health problems.

# The Cultural Implications of Primary Health Care and the Declaration of Alma-Ata: The Health District of Kédougou, Senegal

## Introduction

### The Development of the Concept of Primary Health Care: the Conference of Alma-Ata and the Bamako Initiative

In 1978, the World Health Organization (WHO) and the international health community convoked a conference in Alma-Ata, Kazakhstan to address global inequalities in health. The conference resulted in the publication of the Declaration of Alma-Ata which made the ambitious call "for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world" (WHO 1978). In addition, a new tool, primary health care, was developed to carry out this project. This new strategy of tackling health went beyond the strictly medical components of health care to include the underlying social, political, ecological, and cultural factors affecting health. A complete definition of primary health care can be found in article VII of the Declaration of Alma-Ata which is included in the appendix (annex #1).

During the 1980's, the global inequalities in health did not disappear, and some would argue that they had grown worse — especially in Sub-Saharan Africa. In response a second WHO/UNICEF conference was convened in Bamako, Mali in 1987. At this conference, the Bamako Initiative (BI) was published which reformulated the principles of primary health of the Declaration of Alma-Ata to meet the specific problems of health care in West African nations. Although the BI was formulated through the collaboration of various Sub-Saharan health ministers and WHO leaders, it was largely the brainchild of the director of UNICEF, J.P. Grant. In many ways, the BI can be seen as the Sub-Saharan[1] version of the Declaration of Alma-Ata in that it specifies an original primary health care model that emphasizes community involvement and the establishment of a reliable model for the supply of affordable medication. This model, which is sometimes referred to as a rolling funds model (*fonds de roullement*), will be addressed below in greater detail.

In Senegal, a number of programs have been formulated following the BI which reflect the principles of primary health care — but in a system that is strangled by insufficient funding. These programs therefore have had the objective of passing the financial burden of health care from the central government to local communities. The *Plan National de Développement Sanitaire — PNDS* (National Plan for Sanitary Development)[2], is the most notable example. It was developed with the goal to decentralize the management of primary health care to the communities concerned.

Outlined above is the main political and ideological framework underlying primary health care in Senegal; it is, however, essential to remember that these documents and declarations remain written statements. And even though the principles of primary health care may be well developed, and that even though the ambitious statements made in the Declaration of Alma-Ata may be well intentioned, they remain abstract principles and goals — not realities. In light of this, the purpose of the text below is to analyze how the Declaration of Alma-Ata and the consequent principles and documents are reflected in concrete terms by examining the actual conditions of health and primary health care in a small, isolated health district of Senegal, Kédougou.

## The Global Context of Differences in Conditions of Health: A Comparison of the United States and Senegal[3]

The Ministry of Health of Senegal reported in 2004 that life expectancy at birth in Senegal is 58 years for men, and 61 years for women (Direction de la Prevision 2004a, 36). In comparison, the average American man lives to be 75.02 years and the average woman lives 80.82 years (CIA World Factbook). Although, these numbers alone are shocking, they do not by themselves give a complete picture of how deep the inequalities in health actually are.

The low life expectancy in Senegal can be partially attributed to high infant mortality: in 2005 in Senegal, 121 deaths for every 1,000 births were reported in a national population and health census (EDS IV *Enquête Demographique et de la Santé)*. In the United States, this number stands at 52.9 deaths per thousand births. For Senegal, though, 121 deaths for every 1,000 births is a significant improvement from the previous decade: between 1992 and 2000 infant mortality actually rose from 131 to 145 deaths per 1,000 (Ibid.)[4].

Epidemic diseases that are rare or nonexistent in developed countries persist as facts of life in Senegal. Malaria, for example, is responsible for 59% of declared *mortalities*[5] (number of deaths per thousand), and for 42% of the total

cases of declared *morbidity* (prevalence of disease) (Direction de la Prevision 2004a, 38). In contrast, malaria was eradicated in the United States by the military during a three year campaign (1948 to 1951) (CDC 2004). Diarrhea from unsanitary conditions and the dehydration that follows — health problems that have largely absent in the United States — are other major killers that have persisted at epidemic levels in Senegal: 26 % of children under five years of age are victims (Direction de la Prévesion 2004a, 35). This situation is even worse in rural areas where diarrhea and dehydration affect 30% of children, compared to 22% in urban areas. The medical region of Tambacounda, which includes the health district of Kédougou, is by far the worst affected with a 35% morbidity rate due to diarrhea.

The list of diseases that are particularly common in developing countries continues with tuberculosis, which is perpetuated by a low follow-up rate (8% of the tuberculosis cases that were treated in 2004 had already been treated at least once, which implies a 1 % relapse rate) (Ibid).

Malnutrition, however, is perhaps the most serious epidemic in Senegal: according to the *Direction de la Prévision et de la Statistique* in Dakar, one out of every six children in 2005 suffered from chronic malnutrition and 5% of Senegalese children suffered from severe malnutrition — numbers which present a cruelly ironic contrast with the epidemic of obesity that is growing in the developed world. It is important to note, however, that disparities in nutrition are apparent even within Senegal especially between rural and urban populations. The level of physical underdevelopment among children in urban areas is estimated at 9%, whereas it jumps to 21% in rural zones.

Maternal health, perhaps one of the most basic components of the social fabric of health, is my final point of comparison. In 1992, the most recent year when a census on maternal health was conducted, the EDS II found that 510 mothers died in childbirth for every 100,000 births (450 in urban areas and 950 in rural areas). In contrast, a 1992 CDC study found that 525 women total died in child birth in all of the United States, which translates into about 12 maternal deaths for every 100,000 births (CDC, 2003).

## Overarching Causes

An explanation for these differences in health is not easily found. Bad governance is often cited as a possibility; however, in light of Senegal's rapid population growth and the economic burden that it implies, it seems unfair to hold the Senegalese government accountable for the failure to stabilize public health conditions. Since the 1920's, West Africa's population has grown with

increasing rapidity (Feierman and Janzen 2002, 35), and since independence in 1960, the rate of growth of the population has remained well above that of the Gross Domestic Product (GDP) (Sullivan 2006). Even though the economy in Senegal has expanded by 5 % between 1995 and 2002, and again by 6.4% in 2003, profound structural insecurities persist. The population growth rate remains high at 2.48% (CIA World Factbook) and in 2004 50% of the 11 million population was estimated to under 20 years of age (Direction de la Prévision 2004a, 13). All of these factors mean that the Senegalese ministry of health has had a constantly expanding population to serve with an unequally expanding source of revenue.

Other explanations for the economic difficulties, and consequently, the difficulties in maintaining public health include the drought and desertification that has sapped the agricultural sector since the 1970s. The legacy of colonialism and the persistence of post-colonialism through the structural adjustment programs that were forced on most Sub-saharan African countries by the World Bank in the 1980's are also often listed as causes.

## Research Objectives

Although, bad-governance, uncontrolled population growth, economic insufficiencies, environmental degradation, and the international structures of political domination may all be contributing factors to the persistence of inequalities in health since the Declaration of Alma-Ata, my purpose is not to uncover these broader, overarching causes. Instead, the primary objective of this study is an examination of how the principles of primary health care, as they are outlined in the Declaration of Alma-Ata, are manifested in an isolated, rural district of Senegal. A secondary objective and philosophy is also developed throughout this project: even though the overarching factors cited above may all be profound causes for the inequalities in health, successful solutions to persisting health problems must be addressed at the communal level, and that the community concerned must be actively engaged in the formulation of these solutions.

## Background: The Conditions of Life in the Health District of Kédougou

As primary health care is defined by an inclusive understanding of health that involves, "in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and

other sectors" (WHO 1978), it is necessary to briefly describe these other sectors, as well as their social, historical, and cultural components in the health district of Kédougou.

### The Social and Historical Context

Kédougou's current social and cultural structure has been strongly shaped by dramatic changes that have occurred over the past two centuries; namely, the internal religious wars that wracked the region in the eighteenth century. The Islamic leaders El Hadj Omar Tall, Almamy de Timbo, and Alpha Yaya waged *jihad* on the populations of the region leaving only scattered pockets of Animists unconverted[6]. In the second half of the nineteenth century, the French began their colonial invasion, which initially took the form of commercial incursions, but culminated in full blown wars of conquest and pacification between 1888 and 1892. Subsequently, the region of Tambacounda (which includes Kédougou) was annexed and attached to the French Sudan and placed under the direct administration of Bakel (Direction de la Prévision 2005, 5).

### Population

With a population of 102,672 inhabitants in 2002 and covering a geographic area of 16,896 km, the district of Kédougou is one of the least densely populated in Senegal. It is a 14 hour bus ride from the capital and is only accessible by a pot-hole peppered road that is notoriously dangerous.[7] With only 16,672 people inhabiting the capital of Kédougou, 85% (85,776 people) of the population lives in rural areas. The ethnic distribution is dominated by the Pular ethnic group (41%), followed by the Mandinka (24%). In spite of the fact that the Wolof expansion reached the rest of the region of Tambacounda and the rest of Senegal with the construction of the Bamako-Dakar railroad in the late nineteenth and early twentieth centuries, only 1.4% of the population of Kédougou is ethnically Wolof.

### Education

As the definition of primary health care in the Declaration of Alma-Ata also includes "education concerning prevailing health problems and the methods of preventing and controlling them," a brief description of the educational services should not be neglected.

The rate of education in the district of Kédougou is low in all age groups, with the greatest level of underdevelopment in the higher education sector. The vast majority of the trained professionals that work in Kédougou live in

the urban center and come from the national capital, Dakar. The number of individuals that make it through higher education is kept low not only by the lack of infrastructure and schools, but also by the demands of the agricultural lifestyle. One Peace Corps volunteer, Kei Peterson, who had just completed her two year work period in Patassy, a small village in the district of Kédougou, told me that only a single student out of her entire village had made it to secondary school because the rest left school to work in the fields.

Furthermore, boys are heavily privileged when it comes to education and economic opportunities. As a result, most women do not know French or Wolof and have even less access to outside information and government services. Indeed, as another Peace Corps volunteer, Ty-Lavers, described to me, women in rural villages are traded in marriage as if they were chattel, they are often beaten[8], and overall, they are regarded as second class citizens.

Only 2% of children that are 0 to 6 years old have access to kindergarten and early educational centers, structures that would otherwise free mothers up for other activities. In 2002, there were only 12 community based schools (*écoles communautaires de base — ECB*) (9 to 14 year old students); as well as 163 elementary schools that are attended by 14,991 students (Direction de la Prévision, 2004b, 16). These schools, though are often one room stick enclosures where multiple grades are taught simultaneously and materials are rare to nonexistent. In the past five years, however, the number of well funded and supplied schools has increased through the funding of USAID which has constructed and financed five new schools in the district. There are also five alphabetization schools that teach Pular and Mandinka, two of the national languages, several of which are organized and financed by SODEFITEX, the national cotton company.

### The Economy and Agriculture

The economic activities of the population of Kédougou are dominated by subsistence agriculture. The main crops that are produced for auto consumption are corn, millet, and rice; however, peanuts, rice, and cotton are also grown as cash crops — for many, this is the sole source of income.

Other economic sectors include livestock and the production of charcoal. Indeed, with a large pasturage area, considerable quantities of cotton and cereal residue, water and land for foraging, as well as bovine subspecies that are well adapted to the Sahelian environment, there is a large potential for the livestock economy. However, the sector is severely limited by a universal lack of equipment for milking, building enclosures, by the destruction of land from over-

pasturage, and by artificial ground fires that are lit to enrich the soil. Adding to these factors, charcoal production has been systematically stripping the land in Kédougou of large tree species (Direction de la Prévision 2004b, 46).

### The Formal Structure of Health Care

One of the overbearing difficulties of providing primary health care across Senegal, and in Kédougou in particular, is the largely rural nature of life. Although there is a *centre de santé* (health center) in the town of Kédougou with a capacity of 29 beds, 5 doctors, and 40 other personnel (Ndiaye Youssou 2006), it serves only approximately one seventh of the population of the district[9]; and the rural populations, many of which live in isolated villages that are far from the *centre de santé*, have extreme difficulty accessing these services.

To reach these rural populations, the district of Kédougou is divided up into sixteen *comunautés rurales* (rural communities) each with a *poste de santé* (health post). However, according to the supervisor of primary health services at the *centre de santé*, only ten of these are staffed by adequately trained health workers.

It is important to note that the construction of a large, modern, and technologically advanced hospital in the small rural village of Nénifescha was completed in 2003. The main focus of the hospital, which was financed through the initiative of the first lady, Mme Wade, is to provide maternal health care to the rural populations. However, in spite of the new hospital, it is the exception for a woman to give birth with the help of a trained professional and maternal health remains one of the most serious health problems in Kédougou.

Other efforts to reach the isolated, largely rural populations include vaccination campaigns, tuberculosis treatment campaigns, and a new program called *stratégies avancées* (advanced strategies). The newest of these programs, the *stratégies avancées* was begun in 2004 as part of the national effort to fight HIV infection. A *sage femme* (midwife) and a lab technician travel from village to village where they consult with pregnant mothers on family planning and offer free HIV testing. If the individual tests HIV+, he or she is then advised to come to the *centre de santé* to receive free antiretroviral treatment.

Other actors also play a role in providing primary health care in the district. For example, while I was staying at the *centre de santé* in Kédougou, a representative of the national cotton industry, SODEFITEX, came into the health center and requested permission from the head doctor to build a *case de santé* (health hut). Talking to an *Agent de Santé Communautaire* or *ASC* (Community Health Agent), I found that SODEFITEX was also sponsoring various vaccination campaigns and intervention programs to raise awareness about malaria. In

the ASC's words, SODEFITEX does not want the farmers to fall sick during the cotton growing and picking seasons, which also happens to be the peak season for malaria, because the cotton harvest will suffer as a result.

There are also various Peace Corps volunteers in the region who are working on health projects. And finally, the military plays a very important role in providing health care, not only in the city of Kédougou where there is a military base with a health care unit, but also through various military bases in rural villages that provide health services[10].

## Methodology: My Role as a Researcher in the Health District of Kédougou

### Three Visits to Kédougou

My first visit to Kédougou was with the School for International Training (SIT) between the 22nd of February and the 1st of March, 2006. I lived with the family of the village chief of Boundou Coundi, a village of approximately 250 inhabitants (Blanas 2006), in the *communauté rural* of Banda Fassi. During this initial visit, I carried out interviews and had conversations with the inhabitants of two villages, Boundou Coundi and Patassy. I also met the health staff that worked at the *poste de santé* of Banda Fassi: Rigobert Keita, an ASC; and Mansally, the *infirmier chef de poste* or *ISC* (chief nurse of the post). In Patassy, I met the Peace Corps volunteer, Kei Peterson, who was constructing a health hut, and I interviewed the military nurse that worked at the French and Senegalese training camp there. Finally, during this first stay in Kédougou, I also made contact with Youssou Ndiaye, the adjunct doctor at the *centre de santé* of Kédougou, and I requested permission from him to return to the *centre de santé* for a week of research.

I returned to Kédougou with the permission of Dr. Ndiaye and the doctor in chief, Dr. Doudou Séne, between the 11th and the 19th of April. During this second visit, I rented a room at the *centre de santé* so as to become more closely integrated into the health community there. I conducted participant observation research in the consultation room as well as the birth room and by interacting with the health agents at the *centre de santé*. I also returned to Boundou Coundi and Patassy to follow up on questions that I had formulated during my absence in Dakar. Finally, on my last day at the *centre de santé*, I attended a training session on the national program for the *Prevention de la Transimission Mère-Enfant* or *PTME* (Prevention of the Transmission from Mother to Child) of HIV.

On the 27th of April, I returned to Kédougou with the intention of accompanying a *sage femme* from the *centre de santé* on a *stratégie avancée*. As explained above, the *stratégies avancées* target rural mothers for family planning counsel-

ing and voluntary and free HIV testing. This particular outreach program was meant to last three days; the *sage femme,* however, fell ill with a high malarial fever and the *stratégie avancée* was postponed until a couple of weeks later — well after my period of research had ended. I used this time instead to gain a deeper insight into the perspective of the inhabitants of Kédougou towards the different structures of health care.

### The Research Methods and their Justification

Three different forms of research made up the majority of my findings: formal interviews; informal conversations; and participant observation. To a lesser degree, I also used secondary written sources, such as the research at the *Direction de la Prévision et de la Statistique* (Office of Statics) at Dakar, books and internet sources. And finally, I met a private pharmacist in Kédougou who had written his doctoral thesis on urinary bilharzias or *schistosomiasis* in the district villages.

The majority of my research, however, was informal. This was in part due to the fact that recent, documented information that is specific to primary health care in Kédougou is rare and difficult to find. The most important reason, however, for the informal nature of my research was that I quickly found that experiential learning was the most effective method not only of gathering information, but of forming a broad perspective on the social aspects of health in Kédougou. Furthermore, the Declaration of Alma Ata stipulates that primary health care should "address the main health problems in the community," and in my opinion, the actual members of the community are in many ways in the best position to determine what their "main health problems" are. For this reason, I relied on the cultural insights and the opinions of the people that I met in Kédougou as much or more than on written sources.

At the *centre de santé* more than anywhere else I encountered difficulties with the participant observation style of research. I frequently had the sense that the health personnel were hostile towards my presence and that they did not appreciate my frequent questions. Furthermore, at times it seemed that the personnel gave me answers even if they did not know them; or, that some people gave me the answers they did because they thought that that it is what I wanted to hear; and others refused to answer me at all.

One strategy that I developed in response to these problems was to leave my notebook and pen behind. I often noticed that people lost all desire to speak when they saw that I was writing down what they were saying; with others, it had the exact opposite effect. Either way, the notebook and pen seemed to condition the answers of my informants in a powerful and undesirable way.

Other methods I used to gather research are better described as inquisitive detective work. For example, I went from merchant to merchant in the town market of Kédougou searching for prescription medicines after a pharmacist had hinted to me that prescription medicines are commonly sold there. During breakfast, which I took in a small *buvette* next to the market with four benches around a table and a woman who serves *mburu ak niebe ak kafe tuba* (spiced coffee and bean sandwiches), I pried the other customers with questions to find out their perspective about the health services in Kédougou. And at night, I went to the *garage routier* (town transportation center) partly to take a *café touba*, but mainly to observe the hundreds of people who were waiting for a truck to return to Guinea where it had been hinted to me by a military nurse at the *centre de santé* was the source of one of the main health problems in Kédougou, STD's, especially the emerging threat of HIV.

Throughout my research, I found that I could only make observations of this nature by engaging and talking with the people of Kédougou. The aims of my research were as much qualitative as quantifiable, and the information obtained in this way provided an essential perspective on information from other sources, such as from the office of statistics at Dakar and documents at the *centre de santé*.

## Results: The Structure of Health Services in the District of Kédougou

### The Health System in Senegal and the Health Committees

At the *centre de santé* of Kédougou, I collected information on the primary health care system through a variety of sources and methods; the most comprehensive explanation, however, was provided by the general treasurer of the health committee of the health district of Kédougou, Famakan Dembélé. Dembélé had invited me to lunch during which he showed me pictures, diagrams, and documents of the *comité de santé*.

According to Dembélé's, the main objective of the *comités de santé* are to establish an auto-dependent health system that is managed at the local level by health committees. Dembélé then explained that the health committees at the health district level exist in two tiered hierarchical relationship: the health districts which are managed by the *district committees*; under which are the *health committees* which manage the urban health centers as well as the surrounding rural health posts. For the health district of Kédougou, the district committee, which is located at the *centre de santé,* oversees 16 health committees including the health committee of the *centre de santé* itself.

Dembélé is himself the general treasurer of the district committee of health[11] which also includes a president, a vice-president, an adjunct treasurer and an administrative secretary. In the health posts, on the other hand, the representative is either elected, as with the *infirmiers chef de poste* or ICP's (chief nurses of post); or if no health agent with adequate training is available, an *agent de santé communautaire* (community health agent), also known as an ASC, takes the position by default. The board members of the health committees are elected by the people every two years and are supposed to hold regular public general assemblies.

The role of the health committees was systematized in Senegal in 1992 with the *Law # 92-118*, (*Décret* 92-118) in an attempt to decentralize decision making in health services. The codification of the role of the health committees reflected a central principle of the BI made five years earlier that "decision making must be decentralized in the sanitary districts, especially concerning the management of primary health care; and that the financial management of resources must be decentralized so that resources produced locally may be managed by the communities concerned" (WHO 1987). This was in part a response to the nature of the highly centralized and hierarchical health system. The disadvantages of such a system are convincingly described in an analysis of the Liberian health care system: "Although bureaucracy as an ideal may be efficient, in practical application in Africa the district medical officer often feels abandoned and demoralized at the periphery" (Clapham 1978, 428). Furthermore, decentralization was also meant to respond to the dire need for political independence in a system that is bogged down by what is referred to by the same author as "clientelism in the medical health structure" — a patron-client system that is "far removed from the Weberian ideal of rational-legal legitimacy expressed in bureaucracy. Only hierarchy is preserved" (Clapham Ibid.)

Dembélé, however, did not mention the faults in the system. Instead, he continued with a detailed explanation of the structure of the ministry of health. The health system in Senegal is divided into three levels: the national level; the regional level; and the district level. The national health ministry is located in Dakar and it administers all health services below it. Senegal is then sub-divided geographically into 10 medical regions, each of which includes one or more hospitals. The medical regions are themselves divided into districts, which include health centers, health posts, and, at the lowest level, the dispensaries or health huts. The health district of Kédougou is a part of the medical region of Tambacounda, which in turn is a sub-region of the ministry of health of Senegal. Within the health district of Kédougou, there is one health center, sixteen health posts, and many dispensaries.

### The Lack of General Assemblies

Dembélé provided this description of the structural organization of the district of Kédougou freely; however, it seemed to me that it was more pertinent whether the decentralization programs had brought an improvement in the problems mentioned above. I asked Dembélé, therefore, if he thought the health system functioned better after the Bamako Initiative. Dembélé replied that "*Les choses sont mieux. Maintenant ce sont les populations qui font les décisions pour l'administration des soins de santé primaires.*" ("Things have improved; now, it is the populations that have taken charge of their own primary health care"). I then asked when the last assembly was held by the district committee and Dembélé handed me a document in response. It was a transcription of a district health committee general assembly that was convened on October 29 , 2005 to address the renewal of the board. It read that

> Le bureau du comité du district de Santé de Kédougou devrait être réélu chaque deux ans, mais que le dernier comité du district était en existence, sans renouvellements et sans élections pendant une période de 22 années — depuis 1983. Et il était matériellement impossible de rendre un bilan moral et financier des derniers 22 années car le président et le trésorier étant tous décédés, le seul présent parmi les membres du bureau sortant n'a pas étais informé à temps pour préparer un bilan moral et financier. ("The board of the district committee of Kédougou should be reelected every two years, but that the last district health committee had been in existence without any changes or elections for a period of 22 years — since 1983. Furthermore, it was materially impossible to give a moral and financial account of the last 22 years because both the exiting president and the treasurer both were deceased, and the only member present among the exiting board was not informed in time to prepare a moral and financial account.")

I asked Dembélé if the board of the district health committee had convened a general assembly since then and he answered no. In other words, since the renewal of the board, a general assembly had not been convened for more than six months.

### Political Conflict

In the following days, I found that the health committee at the *centre de santé* was experiencing similar problems to the district health committee. The treasurer of the *centre de santé* could not remember the date when the last general

assembly was held. After rummaging through a large stack of papers underneath a case of sodas that the treasurer sold to the hospital staff (the patients rarely had enough money to splurge on expensive bottled sodas), he eventually uncovered a transcription of the most recent general assembly of the health committee of *the centre de santé* in March 2006 — only a month earlier. The general assembly, however, had been convened by the president and the vice-president of the *centre de santé* health committee with the objective of impeaching the general secretary and excluding him from all committee activity. After reading this, I remembered an episode that I had witnessed at the *centre de santé* two weeks earlier during an interview with the *Superviseur de Santé Primaire* or SSP (Supervisor of Primary Health Services). The general secretary of the *centre de santé* health committee, (the person who the president and the vice-president were trying to impeach) had come into the office of the SSP to list a complaint against the other members of the committee. He accused the president and the treasurer of not having convened a general assembly for more than a year and a half and of having completely excluded him from all committee activity. The SSP reassured the secretary saying that he would talk to the president and the treasurer to resolve the problem. A couple of minutes later, however, the *president* of the health committee of the *centre de santé* entered the office of the SSP to complain against the secretary general who had just left.

After these episodes, I could not help but question how the health committee at the *centre de santé* could properly manage primary health care, as it is called to do in the Bamako Initiative, if the president and the secretary general were not in communication of any kind besides attempts to impeach each other.

### Health Agents

Besides the internal conflicts, the relationship between the health committees and the health personnel at the *centre de santé* was marked by serious problems in communication. As an example, a state nurse explained to me that even though she had worked at the *centre de santé* for years, she did not believe that the district health committee or the health committee of the *centre de santé* had convened a single general assembly. Furthermore, she informed me that even though it is the duty of the health committees to pay the *agents de santé communautaires*, there were several long term *ASC* employees at the *centre de santé* who were still waiting for their first pay check.

Even though the personnel were quick to give me a list of complaints against the health committees trying to understand the underlying causes for these failures was exceedingly difficult. This was due in part to a seeming

overall lack of knowledge — and strangely, a lack of interest — in the functioning of the health committee on the part of the health care staff. In addition, the president, the vice-president, and the secretary of the health committee were all absent and nobody knew when they were due to return.

### Financial Management of Public Health Institutions and Financial Difficulties of the Health Committees

In the Bamako Initiative it states that "the financial management of resources must be decentralized so that resources produced locally may be managed by the communities concerned," and according to Dembélé, the health committees is the administrative structure that is supposed to carry this out.

What Dembélé did not explain, however, was the strategy used for the "financial management" of resources. From speaking with other health agents at the *centre de santé* and in Dakar (Sow 2006), I was told that a model of financing called a rolling funds model (*fonds de roullement*) had been implemented in the health care systems across West Africa along with the Bamako Initiative. The rolling fund manages the payment of the community health agents (*agents de santé communautaires*), the renewal and purchase of new medications, and improvements in infrastructure through the profits collected from the sale of medication and the tickets for consultation.

The rolling funds model is praised by international aide organizations because it implies fiscal autonomy (Klimek & Peters, 1995, 146)[12]. It was clearly evident, however, that even though the health committee may be financially autonomous, it is certainly not financially self-sufficient.

Indeed, the current health committee was still trying to recover from a significant debt that had been accumulated by the previous health committee. Furthermore, the expenses of the current health committee regularly surpass their profits. In March 2006, for example, the health committee of the *centre de santé* had spent 1,845,825 F CFAs (~ $ 3,550), but had earned only 1,197,200 F CFAs (~ $ 2,300) in profits, leaving a deficit of 648,625 F CFAS (~ $1,250).

After going over these figures with the treasurer of the health committee, he remarked that it was simply unrealistic to expect these costs to be met with profits made from a population that lives primarily under the poverty line. Indeed, tickets for consultation, one of the main sources of revenue for the health committee, cost only 200 F CFAs (~ $ 0.39) and patients are not required to pay this fee.

It should be mentioned that a number of collective health mutuals do exist in Senegal. However, only a minute fraction of the population has access

to these mutuals and the people who do have access often opt for private health services anyway. In Kédougou, for example, the *Mutuelle des Volontaires et des Maîtres Contractuels de L'Education National,* or *MVC,* is the only health mutual and it is reserved solely for teachers.[13] Apart from teachers and other *fonctionniares* (government paid professional), the vast majority of the population remains without any financial protection.

The rolling funds model has also provoked the accusation that "often the notion of 'community participation,' a key element of the Declaration of Alma-Ata as well as the BI, is limited to the economic notion that 'the population must pay'" (Afrique Amitié, accessed 05.08.2006). The *centre de santé*, however, cannot function with the rates it charges and the population of Kédougou cannot afford to pay higher rates. The health committee in consequence, has been forced to search for funding from other sources. The *centre de santé* has taken out a credit of 3,000,000 F CFA (~$ 5,770) from the military camp at Kédougou that is being repaid in monthly installments of 285,000 F CFA (~ $ 550). The *centre de santé* also periodically receives medications from USAID (United States Aid to International Development) (Bâ 2006). But in spite of these alternative sources of revenue, the *centre de santé* is nonetheless starved for funding.

One of the most detrimental consequences of the health committee's insufficient funding is the low salaries and the lack of motivation among the health care staff. Indeed, the health committee has even deferred payment indefinitely for several ASCs. This was explained to me in concrete terms by Moussa Diakhite, a *vacataire*[14] at the *centre de santé* who collects the tickets for consultations at the entrance gate. Twenty-six years old and with a wife and two children, Moussa has worked at the *centre de santé* of Kédougou since 1996. When I asked him if he is satisfied with his work, he answered, "*Je suis là, mais quand même, je n'ai rien à faire. Il n'y a pas de bénéfice. Ce n'est pas du vrai bouleau…*" ("I sit here, but even so, I have nothing to do. There are no benefits. It is not real work…") He works only three days out of seven and he is paid 15% of every 100 F CFAs (~ $ 0.20) that is taken in from the sale of the tickets for consultations. Moussa claimed that his salary normally comes out to be 20,000 to 30,000 F CFAs (~ $ 38.50 to $ 57.70) per month. In fact, I found out later that Moussa earns more than this. From looking at the employee payment records of the health committee of the *centre de santé*, I found that in November 2005 (the last available record of salaries) Moussa had earned 59,000 F CFAs per month (~ $113.00). On the other hand, Moussa was one of the most well paid employees on the list of *vacataires*. Of the twenty or so employees on the list, there were perhaps five that earned only 15,000 F CFAs (~ $ 28.90) per month;

and according to the nurse from the *salle de pansement* (bandage room), there are a number of other employees that are yet to be paid their first pay check.

As a result of the low salaries (or complete absence of pay), an atmosphere of general apathy permeated the *centre de santé* which was apparent even among the *agents de santé étatique* who were often stationed in this remote rural outpost against their will. The poor quality of health care could have greatly been improved with an increase in motivation of the health care staff. Instead, the patients at the *centre de santé* were often mistreated by the health staff especially in the consultation room. A couple of examples bear repeating. A nurse who had recently finished her training in Dakar was stationed at the *centre de santé* of Kédougou against her will. The nurse spoke only Wolof and French, whereas the majority of the population of Kédougou does not speak either of these languages[15]. Because of this, the nurse was often not able to communicate with the patients in the consulting room without the help of the nurses' aide. However, when the nurse's aide was not available, the nurse barely made an effort to communicate with the patients and I even witnessed a consultation between the nurse and a mother with a sick child where the nurse mocked the mother for not speaking Wolof and for not knowing how old her child was. Over the course of my stay in the *centre de santé*, I realized that this kind of treatment was the norm rather than the exception.

Other examples include certain bureaucratic practices by nurses in the consultation room. They insist on recording the birth age and the place of residence of patients in their ledger book before beginning to give them medical attention. The nurses would ask the patients these questions without regard for the fact that they are universally considered cultural taboos in Senegal. Even worse, the nurses would insist on asking these questions before anything else — no matter how serious the condition of the patient was. For example, while I was observing in the consultation room, a boy arrived at the *centre de santé* with an open arm fracture; however, before even allowing the boy to lie down, the nurse took several minutes to record the personal information of the boy and the circumstances of his injury in her ledger book.

In the rolling funds model set up by the Bamako Initiative, the burden for health care is placed on the shoulders of the sick, an inversion of the method of health care coverage of the majority of industrialized countries where "health care systems that… are collectively financed have largely replaced systems where the individual is responsible for the costs of his health needs[16]" (Ridde 2004, 1). Indeed, the Bamako Initiative has been described by others as a perverse inversion of a normal health care system where the healthy support the ill. However, medicine and health care are often considered luxuries for population to whom

food is periodically scarce — populations that are supposed to bear a large burden of their own health care costs. As a result, the *centre de santé* is strangled for funding and the health care system is left with gaping holes.

### The Supply of Medicine

I also found that not only has the quality of, and access to, primary health care at the *centre de santé* suffered under the Bamako Initiative, but that medication is extremely difficult to access.

The stock of medication at the *centre de santé* (as at all other public health institutions in Senegal) is also managed under the rolling funds model where, "in the beginning, a stock of essential generic medications is offered freely by the donors to the administrative committee of the dispensary [or other medical institution]. These medicines are then sold to the patients with a profit margin. This profit margin, which is added to the payments made by the patients for consultations, allows for the repurchase of the initial stock of medication and the improvement of access and qualities of services (incentives to personnel, repairs, and building…" (Ridde 2004, 8). However, as certain authors have pointed out, in this model of restocking, there is the danger that "in the absence of budgetary planning and good management, the profits that are recuperated are insufficient to finance the refurbishment [of medication] and the reserves exhaust themselves little by little" (Klimek & Peters 1995, 137). And, in fact, I found that the danger described here mirrored exactly the condition of the pharmacy at the *centre de santé* of Kédougou.

From observing the pharmacy of the *centre de santé* it quickly became evident that a large number of the medications were missing. Indeed, after asking the pharmacist, I found that of 76 medications on the list of essential medicines, 17 were not available. Certain medicines had been missing for months and others for years. Biltricide, for example, a medicine that treats urinary bilharzias (schistosomiasis) and that is absolutely essential in a district where close to 75% of the population is effected by this disease (Guiro 69), has been missing from the pharmacy of the *centre de santé* for more than three years (Bâ 2006). Other examples of essential material that was glaringly absent were Dicynonel, a blood coagulant, and plastic gloves which have been unavailable for three months (Diallo 2006).

The pharmacist at the *centre de santé* claimed that the causes for these ruptures in the supply of medication are due almost entirely to administrative mistakes, and not to a lack of funds. As an example, he outlined the system of supply of medicines in Senegal. Because Senegal does not have a pharmaceutical

industry, no essential medications are produced internally, but must all be imported which makes the entire supply of medications extremely vulnerable. To address this problem, the pharmaceutical companies of the developed world agreed to provide medications in their generic form through the Bamako Initiative.[17] The medications at a much reduced price (and many have argued of questionable usefulness) are then bought from the international drug companies by the *Pharmacie National d'Apprivisionnement* or *PNA* (National Supply Pharmacy). From this pharmacy, which is located in Dakar, the drugs then pass to the ten *Pharmacies Régionales* (Regional Pharmacies). At the next level, the drugs go to the *Pharmacies de Dépôts* (Depot Pharmacies); and from there, they are distributed to the *centres de santé*, and the *postes de santé*. Finally, they may pass on to the *cases de santé*, or local dispensaries which operate at the village level and which are provisioned either from the pharmacies in the *postes de santé* or the *centres de santé* (Dembélé 2006). (See annex # 6 for the hierarchically organized system of supply of medication.)

The pharmacist at the *centre de santé* also pointed out that one of the consequences of this system is that any rupture at any level in the system of supply prevents those medications from reaching all levels beneath it, making administrative mistakes deadly.

From conversations with various ICPs of Kédougou, I realized that ensuring a continuous supply of medication to the more isolated rural *postes de santé* is even more difficult. An ICP of Khosantu, a *poste de santé* that is approximately 100 Km from Kédougou, assured me that ruptures in medication were the norm, and that the situation becomes even worse in the rainy season, which is also the peak period for malaria. It is important to note, however, that even if the most isolated and rural *postes de santé* are stocked with the appropriate essential medicines, the surrounding rural populations often go without it. The ICP of Khosantu, for example, had a woman had die in his *poste de santé* the week before I arrived in Kédougou because she had waited for eight days with a high malarial fever before coming in for treatment. By that point it was too late.

### The Role of the Private Pharmacies

The ruptures in medication in the public health care institutions is even more troubling when compared to the private pharmacies and military pharmacies where medications are very rarely out of stock.[18]

Indeed, during an interview with the pharmacist of a private pharmacy in Kédougou, *Pharmacie Keneya*, I found that not a single medication that was in rupture at the *centre de santé* was missing from his private pharmacy.

Furthermore, I verified with several other pharmacies that ruptures were in fact very rare for the private institutions (Ndiaye Ismaila 2006, Sidibe Kassouman 2006). Contrary to the statement of the pharmacist at the *centre de santé*, one of the most evident causes for the failures of the public health care system when compared to the private pharmacies is funding. For the year 2002, the amount of money that was spent to import medicines in Senegal was *154.1% of the national health budget*. This means that the private health sector spent 50% more solely on the importation of medication than the minister of health did on all of its health expenses (Direction de la Prévision 2004b, 51). Another possible cause for the differences between the public and private pharmacies is that each sector has different suppliers. The private pharmacies are supplied for the most part through CO.PHA.SE (*Corporation Pharmaceutique Sénégalais* — Senegalese Pharmaceutical Corporation), whereas the public pharmacies are supplied through the *Pharmacie Nationale d'Apprivisoinnement* as described above.[19]

### The Failure of the Supply of Essential Medicines in the BI System

Again the effort to make the health system financially auto-dependent seemed to lead in many ways to a failure to provide primary health care. Because the public pharmacy of the *centre de santé* of Kédougou did not have a large portion of the essential medicines and the private pharmacies did, when patients were given a prescription at the *centre de santé*, they have to go to the private pharmacies or the military pharmacy to have it filled. However, the private pharmacies do not sell the medicines at their BI prices (generic form) and the patients are forced to pay the elevated brand name prices for the same medicines.

Not only does this situation mark the total failure of the Bamako Initiative to provide a universal supply of essential medications in their generic form, but I also observed more immediate, and in certain respects, more serious consequences. In order to fill a prescription that was not available in the *centre de santé* pharmacy, the patients were forced to walk twenty to thirty minutes to the private pharmacy, then walk back, and then wait again in the frequently long line of patients — all of this before finally receiving medical attention. Plastic gloves, for example, had not been available at the *centre de santé* for three months, which meant that the patients first had to go buy the gloves in one of the two pharmacies before they would receive any medical care. In actuality this meant that most patients were treated without sanitary gloves and the few gloves that were available at the *centre de santé* were carefully saved to be used for garrets for blood perfusions.

The example mentioned above of the young boy who arrived at the *centre de santé* with an open arm fracture deserves elaborating. Neither the chief doctor nor the adjunct doctor were at the *centre de santé* when the boy arrived, and the only MD present, the dental doctor, was not capable of treating the open fracture. It was decided to evacuate the boy in the four-by-four ambulance (that often would not start without being pushed) to the *centre hospitalier* (hospital center) of Tambacounda and to give him a perfusion of *Nifluril* (an anti-inflammatory) and an analgesic while the ambulance was being prepared. Because both of these medicines, however, were out of stock in the *centre de santé* pharmacy, the father of the boy had to go to both of the private pharmacies in Kédougou to look for them (the first one did not have *Nifluril* either). This process lasted over an hour in sweltering heat, and meanwhile the boy did not receive any medical care and he still had two to three hours of transportation over a pot-hole dotted road before he would arrive at the hospital in Tambacounda.

### The Parallel Market of Medicines

The inaccessibility of medications at an affordable price had other more subtle repercussions as well. At the hint of the *Pharmacie Keneya* pharmacist, I visited the Kédougou market, a five minute walk from the *centre de santé*. According to the pharmacist, a large quantity of prescription medicines from Nigeria were smuggled into Senegal and sold illegally by Guinean merchants in the Kédougou market (as well as by merchants across Senegal). And indeed, I easily found merchants that sold *Paracétamole*, *Tetracycline*, and even *Chloramphétamine,* for very low prices. I could read on the *Paracétamole* packages "*Made in India.*" The merchant, however, was selling individual pills of *Tetracycline* and *Chloramphétamine* out of the white plastic containers that are used for all the generic BI medicines. One merchant, even though Guinean, spoke Wolof, and I asked him where the medicines came from? He answered, "Nigéria lanu jogé. Wante nungi passé par Guinea," ("They come from Nigeria, but they pass through Guinea.")

It would be difficult to measure what effect these informal merchants have on the health of the population of Kédougou, but it should be noted that *Chloramphétamine* is a powerful antibiotic that is dangerous for pregnant women and for children under five years of age to take. Furthermore, bacterial resistance to *Chloramphétamine* is a growing problem in developing countries (Werner 2004).

## Analysis: General Opinion towards the Health Center

After examining the condition of the health committees, it is clear that many of the objectives for community involvement and financial auto-dependence outlined in the Declaration of Alma-Ata are yet to be met in the health district of Kédougou. However, as it is defined in the Declaration of Alma-Ata, the concept of primary health is not limited to financial management and the supply of medication. It also "forms an integral part [...] of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process" (WHO 1978). For this reason, the analysis below of the conditions of primary health in Kédougou will go beyond the administrative and logistical functioning of the *centre de santé* to focus on the communal aspects of primary health through an examination of "the economic conditions and socio-cultural and political characteristics" of the people in Kédougou.

### The Perspective of the Patients at the Centre de Santé of Kédougou

During the week I spent at the *centre de santé* and the time I spent in the consultation room and the maternity ward, I was able to closely observe the patients and their families. However, because it was extremely unlikely that the patients would express themselves freely if they were critical of *centre de santé* while we were within its confines, I was not able to form an objective idea of their opinion.

In order to get around this obstacle, I designed a short survey to evaluate why the patients chose the *centre de santé* over other health care options, such as traditional medicine. The survey consisted of six questions concerning 1) the symptoms of the sickness, 2) the duration of the sickness, 3) whether they had seen a traditional practitioner or had undergone "traditional therapy" before coming to the *centre de santé*, 4) the place of origin of the patient, 5) the age, and 6) the sex of the patient. I gave the questionnaire to ten patients or to the people who accompanied them. (See annex #4 for the questions and their results).

I found that only three out of six patients had previously or were currently treating their symptoms with a traditional remedy, suggesting that these patients are more likely to consult "modern" services than "traditional" ones. This conclusion was also supported by several of the patients who animatedly answered my question by exclaiming that "*garabu toubab*" (Wolof for "modern" medicine) is much surer than "*garabu cosaan*" ("traditional" medicine).

Definitive conclusions, however, cannot be drawn from this survey because, first, the number of patients included in the survey is too small to represent the larger community; second, the three patients that responded that they were taking a traditional treatment were suffering from chronic illnesses, whereas the others were all experiencing medical emergencies. Finally, the fact that the survey was given inside the consultation room of the "modern" *centre de santé*, could easily have skewed the patients' answers.

### The Opinion of the Inhabitants of Kédougou towards the Centre de Santé

It proved much easier to ask the inhabitants of Kédougou questions about the *centre de santé* through conversations with community members in the context of their daily activities (outside of the *centre de santé*). In contrast to the affirmations that *garabu toubab* is more trustworthy than *garabu cosaan,* the general opinion of the community towards the *centre de santé* was not positive. Bokar Diallo, for example, the teacher of the *lycée* and my host during my third stay in Kédougou, told me that neither he nor any member of his family goes to the *centre de santé* for medical care because, "*Les gens lá ne sont pas bien motivés. Ils ne gagnent pas beaucoup d'argent, et ils sont affectés ici contre leurs choix, alors ils ne sont pas bien motivés. Ce n'est pas sur d'aller au centre de santé.*" ("The people there are not well motivated. They do not earn a lot of money, and they are stationed there against their will, so they are not well motivated. And so it is not safe to go to the *centre de santé.*") Bokar takes his family instead to the health center at the military camp of Kédougou.

From other conversations I heard similar opinions. Another man, Abdoulaye Diop, who ate breakfast in the same buvette as me answered that, "*Wooluma lopital ndaxte nungi ligeey pour xalis rekk*." ("I don't trust the *centre de santé* because they only work for money") when asked what he thought of the centre de santé. Abdoulaye Diop, however, did not trust the military nurses or traditional medicine either. Indeed, the only doctor he did trust was a *toubab* (white) doctor who had performed an operation on him while he was working on the sugar plantations at Richard Toll.

From these conversations, the importance of one of the main principles of the Declaration of Alma-Ata (and more specifically of primary health care) became clear; namely that, "Primary health care is essential health care [...] made universally accessible to individuals and families in the community *through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-*

*determination*" (WHO 1978, emphasis mine). It seemed to me that even if the health care services in Kédougou were greatly improved in terms of technology and funding, the most essential elements towards implementing a successful primary health care program would require at the most fundamental level an improvement in the trust and participation of the community.

### The Importance of Cultural Considerations in Primary Health Care

Not only is mutual support and trust required to improve primary health care, but as the following examples illustrate, cultural understanding of the community is fundamentally necessary. Furthermore, the culture and the social fabric of health care are not easily quantified or compartmentalized, but often involve intricate stories and subtle cultural structures that have far reaching implications.

Polygamy, for example, is the norm for families in Kédougou, and across Senegal for that matter. And although family structures are purely cultural and social phenomenon, they have concrete implications in terms of health. At the *centre de santé*, many women who were in polygamous marriages came in with sexually transmitted diseases which could not be treated if the husband and the other wives were not treated simultaneously. One woman who came into the *centre de santé* was diagnosed by the nurse in the consultation room with *shitbus* (Wolof for syphilis). She was written a prescription for *Extincilline*, a slow acting antibiotic that is a sure treatment for syphilis if the sexual partner(s) of the woman undergo treatment as well. The woman said that she could probably persuade her husband to take the medication with her, and that she could even afford to pay for his treatment; however, she also had three co-wives, and she explained that she could not tell them about her diagnosis with syphilis, let alone get them to pay for the treatment, because they would ostracize her and accuse her of being unfaithful.

When the woman left the consultation room to fill her prescription, I asked the nurse what she would do to help the woman. But the nurse just shook her head and said "*C'est ça le problème*." ("That's exactly the problem.") The woman, and most likely all of the adults in her family, would consequently not be cured of syphilis. Indeed, over the course of the week that I spent in the consultation room, I found that syphilis was a very frequent cause of morbidity for the populations in Kédougou — a problem that no amount of medication will resolve if the above-mentioned cultural considerations are not taken into account.

Another experience that impressed upon me the importance of understanding the socio-cultural factors of health also occurred in the consultation room of the *centre de santé*. Ibra Fall, a military nurse who had received his

health training in the Republic of Burkina Faso, explained to me the particular difficulties of controlling sexually transmitted infectious diseases in the area. According to Ibra Fall, this is due in part to the massive amount of migrant labor that passes through the district of Kédougou. Because Kédougou borders Guinea, it acts as a gateway for a steady stream of migrant laborers, many of whom work in boutiques or sell fruit or charcoal in Dakar; others hope to get rich quickly in the formal and informal gold industry of Kédougou. Indeed, trucks overflowing with young men from Guinea, Mali, and even more distant West African countries are a common sight on the dirt roads of Kédougou. A visit to the *garage routier* (the bus and taxi depot) reveals hundreds of families waiting to catch buses to and from Guinea. As Ibra Fall explained, and as a night time excursion into the *garage routier* which is described below confirmed, this combination of immigrant labor and poverty has inevitably led to a parallel industry of sex workers and a growth in the frequency of many STD's among a population with neither the knowledge nor the means to protect itself.

It was around ten o'clock at night as Ibra Fall explained this situation to me in the consultation room of the *centre de santé*. He was sitting across from me in the still suffocating heat with his legs crossed, a cigarette half forgotten in his hand, and sweat pouring down his glistening face and chest. I asked him specifically if HIV was a problem in the area. He recrossed his legs and told me to go across the road to the *garage routier* and I would find out for myself. The next night, I walked past the wooden bungalows where families live selling mangoes, peanuts, and balls of fried dough to the people waiting in the transportation center of Kédougou where you can catch a rickety taxi or an overloaded bus to neighboring villages and across the border to Guinea. I sat down at the table of a woman selling a few bags of peanuts with a pot of *kafé touba* boiling over a pile of charcoal. Surrounding us were other women selling similar things, and dozens of families sitting in the roots of the acacia trees were waiting for the trucks back to Guinea. I ordered a cup of *kafé touba* and tried to make conversation with the woman. Seventeen years old and living alone with her mother, she was initially shy and confused by me; however, as I stood up to leave, she offered her sexual services to me.

I left soon after that. Part of me was excited by this irrefutable confirmation of Ibra Fall's claims the night before; but more than anything, I was deeply troubled. I was convinced that this 17 year old woman was not acting of lewdness or a lack of decency, but desperation. She was selling peanuts and handful of mangoes for 25 F CFAs each (less than $ 00.05) to people that could barely even afford this. And it seemed even more unlikely to me that this woman had

the knowledge of, or access to condoms and birth control, greatly increasing her chances of contracting an STD or becoming pregnant with a child that she could not support — a perverse cycle of poverty where one of the only means of production available to this woman has become a form of self-destruction.

The *centre de santé* of Kédougou as well as many other health centers across Senegal have attempted to rectify this downward cycle. Prostitution has been legalized since the 1970's so that sex workers can be required to take weekly testing for STD's. Senegal has also implemented a national program to stop the 0.7% HIV infection rate[20] in its tracks. This includes, among other interventions, health team visits to rural villages called *strategies avancées*. The actual implementation of these programs and policies, however, remains largely theoretical. In Kédougou, for example, even thought *stratégies avancées* are carried out by the *centre de santé*, the health center has not even acknowledged the prostitution happening literally across the dirt road.

Furthermore, even when interventions are implemented, they cannot be as simple as passing out condoms and presenting flow charts on the mechanism of infection for HIV; they must go beyond the biological mechanisms of ill health to target the underlying socio-cultural.

I followed up on this issue of maternal health, STD's and HIV with an interview with a *sage-femme* in Kédougou, Aïssatou Diop. She is one of the three *sage-femmes* that conduct the *strategies avancées* at the *centre de santé*, and she also works at a free HIV testing center called the *Centre Adolescent* (Adolescent Center)[21]. When we sat down in her office for the interview, I asked her how she approaches the sensitive subjects of HIV and family planning. In Senegal, which is 95% Muslim, family planning and contraception are widely considered to be against Islam. Furthermore, education on these subjects is made more difficult in the isolated and rural village populations which are especially traditional, conservative, and illiterate.

Aïssatou, however, answered me with another question: "*Est-ce que tu es religieux ?*" ("Are you religious?"). And before I was able to give a full answer, she told me that we had to continue the interview in Wolof even though she spoke fluent French. It seemed to me that she did not appreciate my presence or my questions. Even so, I felt that her request was perfectly legitimate and after stammering along in Wolof for a couple of minutes, she interrupted me, this time in French: "Like the rest of the Senegalese people, I believe in God. I also believe in polygamy, because it is in the Koran. And polygamy is a good thing for women because there are twice as many women in the world as there are men [A statement which I heard repeated more than once]. Also, I do not

believe that it is a beautiful thing to '*limit*' the number of pregnancies, because that does not please God. On the other hand, it is not healthy for a woman to have a child every year. The Senegalese woman has many responsibilities. She works hard, but the men are irresponsible. It is practically impossible for the women to feed a family of twelve with food of quality and in enough quantity every day — especially if it is the man that controls the money. For this reason, women should *space out* their pregnancies. I advise women to try to increase the time between pregnancies to at least two years between each child. However, you should *never limit* the number of children!" And when I asked her how many children she wants, she answered me heatedly "That is not for me to decide. I will have as many children as will please God!"

Again, I was confronted with the stark reality that for any primary health care program to be successful, it must go beyond the purely physical aspects of health. The culture and values of the communities concerned cannot be ignored. It is not enough to master the biological realities of health and disease; rather, it is just as important to have an intimate understanding of a community's socio-economic situation, their beliefs, desires, and culture to bring about a positive change in primary health care. In the words of Mammadou Cissé, the *Superviseur des Soins de Santé Primaires* or SSP (Supervisor of Primary Health Services) of *centre de santé*: "*Pour aider quelqu'un, il y a un préalable: il faut lui connaître!*" ("There is one prerequisite to helping someone: you have to know him!"

Again, the Declaration of Alma-Ata summarizes the underlying social nature of public health problems such as these. In the fifth article of the Declaration, the link between social and economic productivity and health is clearly made: "a socially and economically productive life" is included as one of the main health goals of the Declaration. What it does not address, and by its broad nature cannot address, are the specific cultural considerations that must be taken into account in specific communities. It is at this point that more specific research and local actors must take the initiative.

## Primary Health in the Rural Context

The text up to this point has focused primarily on primary health care in the town of Kédougou; however, as only 16.2% of the population lives in this urban area, the remaining portion of the analysis will focus on the rural areas where the other 83.8% of the population lives.

### Difficulties in Recruiting Health Care Personnel

In terms of health personnel, the fact that Kédougou is primarily rural makes Kédougou an extremely unattractive place to work — especially because most health personnel have previously lived and been educated in the cosmopolitan city of Dakar. Morale is further undermined because the state is forced to station health care workers in Kédougou against their will. The Supervisor of Primary Health Services at the *centre de santé*, Mamadou Cissé, for example, was stationed in Kédougou in 1986 and has made repeated unsuccessful requests to be transferred to a more central location ever since.

The situation is even worse for the ICP's who are stationed in the *postes de santé* or PS (health posts) that are even more inaccessible than the town of Kédougou. For example, the ICP of Oubadji, a PS of Kédougou, had only recently been stationed there immediately after completing his studies in Dakar. He complained that during the wet season, the roads to the *poste de santé* of Oubadji, which is 117 km away from Kédougou, are essentially impassable. This not only makes the ICPs' personal life more difficult, but it makes medical evacuations impossible. Furthermore, the dissemination of medical information is exponentially slower in the isolated villages compared to Dakar, Thies, Kaolack and other urban centers of Senegal, where training for national health programs and other vital information is often passed on through the internet. In the district of Kédougou, in contrast, the health personnel must physically displace themselves to obtain training, information, and supplies, frequently leaving the *postes de santé* without health personnel. This problem even affects the larger *centre de santé*: for two of the three week-long periods that I was at the *centre de santé,* the doctor in chief was absent — and he was the only general practitioner for the entire district of 100,000 people.

It is important to note that the shortage of adequately trained health personnel is not limited to the district of Kédougou. It is a national phenomenon, especially for the approximately 70% of the Senegalese population that live in rural areas. The region of Tambacounda (which includes the district of Kédougou), however, suffers most acutely from this shortage: in 2004, only 2% of state health workers worked in the region of Tambacounda, whereas 45% of state health agents work in Dakar, — even though only approximately a fourth of the population of Senegal lives in Dakar (Direction de la Prévision 2004a, 33).

In order to redress this imbalance, in 2004 the Senegalese government transferred 10,470 health agents to understaffed regions, and an emergency campaign was instituted to transfer 250 health agents per year to peripheral

regions (Ibid). But problems persist. The hospital of Nénifescha is one example; even though it was constructed with state of the art maternal health care technology in 2003, the Senegalese government failed to recruit a gynecologist that was willing to work there. Nénifescha is extremely isolated and any licensed medical practitioner would earn a fraction of what he could make in Dakar. Indeed, the contract of the only gynecologist for the entire region of Tambacounda was not renewed in 2006 leaving the entire region of Tambacounda without a gynecologist (Cissé Mammadou, Diallo Souleye, Sané Idrissa).

The severe shortage of health personnel, however, exists at the most basic level as well. According to the SSP of the *centre de santé*, this is one of the main primary health care problems of the region: of the seventeen *postes de santé* in Kédougou, only seven are staffed with adequately trained health agents.

As with many other aspects of public health, the Declaration of Alma-Ata also addresses the particular nature of this problem: "Primary health care [...] relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community" (WHO 1978); however, concrete and specific solutions that follow this formula and that match the socio-cultural realities of Kédougou is yet to be realized.

### The Importance of the ASCs in the Rural Zones

In Kédougou, such a solution would have to include the ASCs or the *Agents de Santé Communautaires* (community health agents). As mentioned above, the ASCs are not paid by the state, but support themselves mainly through farming as with the vast majority of the population of Kédougou. The ASCs may earn, however, small amounts of cash from sporadic vaccination campaigns that are financed by the state or other organizations. They are also members of the community with whom they work and have spent the majority of their lives; for this reason, they are in an optimal position to understand the main health problems of the communities as they are perceived by those communities. However, even though the ASCs are perhaps best situated to fill the enormous gap in health personnel, they often lack the adequate training and the necessary resources to provide effective primary health care.

In Kédougou, some of the principles of primary health care and the Declaration of Alma-Ata were indeed in place; namely, the reliance "at local and referral levels, on health workers ... midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed." Other

key components, however, were sorely absent — most notably, the absence of suitably trained physicians and nurses that have the technical skill "to work as a health team and to respond to the expressed health needs of the community." Again, even though these principles of primary health care are touched on in the Declaration of Alma-Ata, their specific socio-cultural manifestations remain unaddressed — an the problems persist in Kédougou.

The case of Rigobert Keita, an ASC for the *communauté rurale* (rural community, a subdivision of the district of Kédougou) of Banda Fassi, provides an example of this dynamic. Rigobert Keita lives in the Christian-Animist side of Banda Fassi with his wife, Jaqueline, and his two children Bienvenue and Fatu. I met him during my first stay in the village of Boundou Coundi when the wife of my host, Souleyeman Diallo, fell seriously ill. I wondered if she would be treated and so I asked if they would bring her to the *centre de santé* or at least to the neighboring *postes de santé* in Banda Fassi. Souleyeman Diallo told me that there was an ASC in Banda Fassi by the name of Rigobert Keita but that he would not be fetched. When I offered to fetch the ASC myself and to pay for the medication, however, Souleyeman was extremely relieved. I came back soon after by bicycle with Rigobert Keita and he gave Souleyeman's wife a shot of hydrocortisone after diagnosing her with acute rheumatoid arthritis.

In contrast to many other ASCs, Rigobert Keita had received a significant amount of health training as a military nurse. Furthermore, Keita works regularly on state vaccination campaigns, which are part of the *Programme Extensive de Vaccination* (PEV). Indeed, he had just come back from a yellow fever and meningitis vaccination campaign that had respectively lasted two days and one week. Additionally, Keita had been enlisted by the national cotton company, SODEFITEX, which has a large industrial factory in Kédougou, to carry out an educational program on malaria and meningitis. However, even though Keita is involved in these health programs and that he is paid for these activities, he is only paid small amounts on commission, and he must also pay for the gas for his motor bike with this money. I also observed that a constant stream of men with mugs full of palm wine came through his hut asking for cigarettes or money (or both). It seemed that Rigobert's financial ability to provide health services was also constrained by his additional responsibility of financially supporting many members of his community.

The Declaration of Alma-Ata states the obvious truth that it is necessary for community health workers to be implemented in primary health care programs; but it passes over an essential prerequisite; namely that these health workers need to be supported by a significant increase in number and in financing.

### The Social Network of Health

Besides the ASCs, other individuals such as the village *sage femme*, the *marabou*, and the adults of the villages (practically all of whom have a working knowledge of medicinal plants) all play an integral role in the social network of health in Kédougou as well and where the formal structure of primary health ends, these communal resources take over. A couple of examples bear repeating. A couple of days after I had fetched Rigobert Keita to treat the wife of Souleye Diallo, I found out that the family had first fetched the mother of the village twins who is believed to have special healing powers.

The *marabous* are also a central health figure in the village life of Kédougou of Boundou Coundi. They often have studied in *daaras* (Islamic schools) in Dakar and the villagers consult them for various illnesses, injuries, to resolve conflicts and other social problems. I also heard from the Peace Corps volunteer, Kei Peterson that the people from her village would go to their *marabou* for everything from cuts and infections to malarial fever.

The role of these village-community based "traditional healers" is also recognized by the WHO (WHO 2001) and the Declaration of Alma-Ata: "Primary health care relies, at local and referral levels, on health workers, including [...] traditional practitioners as needed;" however, again the Declaration fails to outline how such traditional practitioners would be efficiently and constructively integrated into a successful primary health care program. Even though these individuals undoubtedly play an essential role in the psychological and spiritual health of the communities in Kédougou, their ability to make improvements in primary health care without significant support and training is questionable and sometimes traditional practices may cause more harm than good. For example, according to the Peace Corps volunteer, the marabou of her village treats infections by slicing the infected wound open with a knife, letting the puss drain out, and then searing the cut closed again with a red hot piece of metal. Other practices such as smearing dirt or dung on umbilical cords (Werner 200), the belief that pregnant women should work harder than normal, that pregnancy should not be mentioned until the sixth month, and female circumcision, are all examples of cultural traditions that are often the direct cause of death.

The World Health Organization has published a *Traditional Medicine Stratagy* (WHO 2001) and authors have tried to define the structures of "traditional systems of health care" in African societies (Sofowora, Abayomi 1996). However, among the "traditional practitioners" in Kédougou, there seemed to be a generalized lack of organization, communication and training — com-

ponents that are a necessary foundation for any system of health care. Indeed, some researchers argue that, although there may indeed be general patterns of cultural healing in Africa, "traditional systems of health" are better described as "systems of not knowing" where medical care is shrouded in secrecy, there is a lack of organization, and the rule is "Don't ask, don't tell." when seeking or giving medical care (Last Murray 1981). Indeed, before being introduced to the *marabou* of Boundou Coundi, I was explicitly told not to ask any questions.

### Agriculture and Nutrition in Kédougou

The final elements of primary health care that will be examined in the analysis are the agricultural situation and the nutritional conditions in Kédougou, components of primary health care that are also addressed in the Declaration of Alma-Ata "in addition to the health sector, [primary health care involves] all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry…"

During my last visit to the village of Boundou Coundi in late April, the chief of the village who was my host, Mamady Diallo, and his son, Souleyman Diallo, brought me to the village field where they grow peanuts, cotton, corn, rice, and millet. The season for planting had not yet started and the villagers of Boundou Coundi were still living off of the stores of last year's harvest. Mamady explained, however, that by July the stores of food and cash begin to run dry and a two month period of food shortage holds the entire region in its grip.

This hunger period was confirmed to me by the two Peace Corps volunteers that I met in two neighboring villages who described July and August in starker terms as a period of famine. The rainy season has set in and even though the first planting is carried out during these two months, the food stores often run out before the first harvest is brought in. Families plan for this period by trying to grow a balance of cash crops — cotton, peanuts, and rice — and crops for auto-consumption — corn, millet, and rice. However, by July, the sacks of peanuts or rice that had been set aside as insurance for the hunger period are often sold earlier for medical emergencies, to buy clothes and — supplies for school, or for other necessities. It depends on the success and wealth of the family, but many only eat two or even one meal a day during a period when everyone is working in the fields or cooking and doing chores from six in the morning to six at night.

Besides the quantity of food, the quality of food is also a serious problem. During the last fifty years, rice — which is rich in calories, but extremely poor in essential nutrients and proteins — has slowly replaced nutrient-rich staple

crops such as millet and corn. According to the Peace Corps volunteer, Ti, this phenomenon is due to the ease with which rice is pounded and sifted compared to corn or millet. To prepare rice, it must only be pounded once to remove the hard, outer envelope. In contrast, corn and millet, require that the grains first be individually separated from the stalk, then pounded (a much harder and longer process with millet because the grains are much smaller), then, ground into a powder, and then rolled up into a couscous or flour for porridge. The advantages of growing rice in terms of labor and time saved for the women who are already overworked and overburdened with other household chores is significant. The consequences, however, are that malnutrition is rampant in the region of Tambacounda, (which includes the district of Kédougou): 40% of children in Tambacounda suffer from malnutrition — the highest rate in Senegal (Division de la Prévision, 2005b). The Peace Corps volunteer described this situation to me in more graphic terms: during the two years she spent in her village, she ate rice three times a day, (except when there were only two meals a day) — with an occasional eggplant or onion or a small amount of leaf or peanut sauce. For my fellow group of SIT students, used to American diets and eating habits, it was a shocking experience to share the food of these villages, even if only for four days. At the end of our village stay when we all returned to the hotel in the city of Kédougou, all of the students sat down to a second breakfast and we gorged ourselves on bread, butter, and coffee. It was extremely disturbing to think that we had the choice to leave, but the people in the villages subsisted on this diet.

Again, even though the Declaration of Alma-Ata touches on the issue of agricultural production and nutrition: "Primary health care includes … [the] promotion of food supply and proper nutrition" (WHO 1978), concrete solutions are not formulated. And even though specific strategies to address these problems in Kédougou are in place, it is all too evident that serious problems persist.

The existing efforts to relieve the food insufficiencies of Kédougou include food donations on the initiative of the President Abdoulaye Wade in 2006. USAID also has a program to distribute food to schools. One of the Peace Corps volunteers, Ti-Patrice Lavers, explained that she did not suffer as badly because she worked with the village school teacher who received food aid from USAID. Besides distributing food to the students who attended the school, the teacher saved up throughout the year to redistribute food during the period of famine. These safety systems, however, are not really systems at all: they alleviate the food shortages but they are not systematic or reliable and they do not solve the root of the problem.

A large part of these problems in nutrition and agricultural production are due to ecological factors such as a drought in 2004 and flooding in 2005. However, solutions must not only address these physical factors, but must take the socio-cultural aspects of change into account

An example of the importance of culture in improving agricultural production was provided to me by the Peace Corps volunteer Ti-Patrice Lavers. A Vietnamese agricultural exchange program had come to her village and to various other rice-producing villages in Kédougou to teach improved farming techniques. The common method of growing rice in Kédougou is to throw it on the earth in handfuls, spreading it evenly over the tilled plot of land. However, the method of planting rice that is used in most other places around the world, and that the Vietnamese organization tried to teach to the farmers in Kédougou, is to plant the rice in straight lines. This allows manure and fertilizer to be placed around the seeds and for the fields to hold water between the rows of rice: a much larger harvest is the result. In the year that the Vietnamese rice-growing organization was in the Peace Corps volunteer's village, the farmers implemented what they had been taught, planted in rows, laid out manure and furrows for water, and the harvest was significantly larger than usual. When the Vietnamese project left the next year, the farmers went back to their old method. The answer the farmers gave when asked why they did not continue to plant in rows was that it was too much trouble to carry the manure to the rice fields even though many families went hungry in July and August.

Whether or not this really was the reason why the farmers did not continue to plant in rows is questionable. What is certain, though, is that efforts to help communities such as these must work closely to understand the cultural components of such primary health care problems. The blanket statement in the Declaration of Alma-Ata that "primary health care includes [the] promotion of food supply and proper nutrition" goes without saying. What is less obvious, are the culturally specific details that will allow such a promotion to take place — a process that may well require much more than a year-long foreign project.

## Conclusion

In 1978, the members of the World Health Organization and global health community that were present at the Conference of Alma-Ata, Kazakhstan, laid out the following ambitious goal: "A main social target of governments, international organizations and the whole world community in the coming decades should be the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive

life. Primary health care is the key to attaining this target as part of development in the spirit of social justice." It is now twenty-eight years after the declaration of Alma-Ata and six years after the target date, and there is no better time to reexamine the global conditions of health. However, it is well beyond the scope of this paper either to quantitatively measure previous successes or to examine comprehensive solutions to the health problems that persist on an international or even a national scale. Instead, what I have attempted in the text above is a qualitative analysis of the conditions of health and the state of primary health care in a small, mostly rural district of Senegal. Kédougou provided a well-focused lens through which to analyze the principles of primary health care and the goals set out in the Declaration of Alma-Ata; and, conversely, the Declaration of Alma-Ata provided a framework through which to gauge the health problems, their causes, and the possible solutions in the district of Kédougou.

But, before focusing specifically on Kédougou, I attempted to put the conditions of health of Kédougou and of Senegal into context by examining international differences in health — specifically between the United States and Senegal. Indeed, the Declaration of Alma-Ata denounces the "existing gross inequality in the health status of the people particularly between developed and developing countries as well as within countries" as "politically, socially and economically unacceptable."

Uncovering these differences was not the sole, or the even the main purpose of this text, however. Rather, the conditions of health and primary health care, as they are specifically manifested in the district of Kédougou, were my principle focus. For this purpose, the *Results* portion of the paper examines the official structures of primary health care which are concentrated in the city of Kédougou.

Again, to stop at this point would have been insufficient. An examination solely of the formal, primarily urban, health care services, would not only ignore the fact that Kédougou, (and 70% of Senegal for that matter {Prevision de la Direction 2004a}) is largely rural, but would also discount the aspect of primary health care that involves "in addition to the health sector, all related sectors and aspects of national andcommunity development," sectors. For this reason, one of the main focuses in the *analysis* portion of this paper is the "related sectors" of "community development," such as agriculture and nutrition in the rural areas of Kédougou.

Finally, because health is defined in the Declaration of Alma-Ata, as not only "the absence of disease and infirmity," but also as a "state of complete physical, mental, and social wellbeing," the cultural practices surrounding seeking and giving health care are also briefly examined in the *Analysis*.

Throughout the research project, my aim was to examine the district of Kédougou and the conditions of health and of primary health care therein as they are defined in the Declaration of Alma Ata. However, despite the usefulness of this framework, the conclusion that I came to is that solutions to the main health problems of Kédougou, or of any community for that matter, are not to be found in documents. Instead, all feasible solutions and successful actions for improvement in health must be found within the community concerned. Not only are the main health problems best understood by the community itself, but any successful attempt to resolve them cannot be carried out without the active participation of the community.

## Terms in French

| | |
|---|---|
| *Agent de santé* | Health Agent |
| *Centre de santé* | Health center |
| *Comité de santé* | Health Comittee |
| *Communautés rurales* | Rural communities |
| *Écoles communautaires de base ECB* | Community based schools |
| *Enquête Démographique et de la Santé* | Demographic and Health Census |
| *Poste de santé* | Health Post |
| *Case de santé* | Dispensary/ Health Hut |
| *Direction de la Prévision et de la Statistique* | Office of Statics |
| *Superviseur de Santé Primaire* | Supervisor of Primary Health |

## List of Abbreviations

| | |
|---|---|
| ASC | Agent de Santé Communautaire |
| CDC | Centre for Disease Control, à l'Atlanta, Etats-Unis |
| CHNF | Centre Hospitalier National de Fann |
| CO. PHA.SE | Corporation Pharmaceutique Sénégalais |
| CPN | Consultation Prénatale |
| DPS | Direction de la Prévision et la Statistique au Sénégal |
| ECB | Ecole Communautaire de Base |
| EDS | Enquête Démographique et de Santé |
| F CFA | Franc de la Communauté Financière Africaine |
| IB | Initiative de Bamako |
| ICP | Infirmier Chef de Poste |
| MVC | Mutuelle des Maitres Volontaires et Contractuelles |
| OECD | Organisation for Economic Co-operation and Development |
| PBIP | Produit Brut Intérieur par Personne |

| | |
|---|---|
| PDIS | Programme de Développement Intégré de la Santé |
| PNDS | Plan National de Développement Sanitaire |
| PS | Poste de Santé |
| PTME | Prévention de la Transmission Mère Enfant (de l'infection VIH) |
| SSP | Superviseur de Santé Primaire |
| WHO | World Health Organization |

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## Notes

[1]Since 1987, primary health care has indeed changed on a global level: presently, 35 developing countries have implemented the eight articles of the BI which have all subsequently restructured their national health systems (UNICEF nd).

[2]The PNDS was put in place in 1998 and is meant to last through 2007. It forms the basis of several legislative and structural reforms, aiming at hospitals, medications and pharmacies (Direction de la Prévision 2004a, 31).

[3]The following section is not meant to underline the good conditions of public health of the United States — indeed, in comparison to other developed countries (and even developing countries such as Cuba), public health in the United States is marked by deep inequalities that run along racial, social and economic lines. Rather, the following section is intended to emphasize the comparative *overall* poor public health of Senegal.

[4]This rise in infant mortality reflects the general economic and social upheaval that followed the devaluation of the F CFA by the French government in 1994.

[5]See Glossary in Annex for definitions of italicized words.

[6]The animist villages were later converted to Christianity by Catholic and evangelical missionaries as late as the 1950's.

[7]On one trip back from Kédougou, I saw three cargo trucks that had flipped during the previous night.

[8]According to Ty-Lavers, women in the Mandika ethnic group are especially oppressed and this ethnicity is known more so than the other ethnic groups to beat their wives regularly.

[9]16,896 inhabitants live in the city of Kédougou out of 102,672 that live in the district.

[10]Besides the military camp in the town of Kédougou, I also visited the military camp of Patassy where the Peace Corps volunteer Kei Peterson worked and lived.

[11]Dembélé is also a reporter at the regional radio station, *radio dunya* that produces informational programs on health.

[12]This source (Klimek & Peters, 1995) also hints that this is a possible reason why the WHO and UNICEF chose the rolling fund model for the Bamako Initiative.

[13]According to Boubacar Ndao, the coordinatior of the Kédougou branch of the MVC, 20,000 teachers across Senegal are members of the mutual. Coverage consists of 40% of all external services (medications) and 100% of all hospitalizations for up to 7 family members. The fees for membership vary according to the pay and position of the teacher: volunteer teachers, who earn around 90,000 F CFAs (~ $173.00), pay 10,000 F CFAs (~ $ 19.0) per year; whereas the teachers with contracts, who earn up to 300,000 F CFAs (~ $577.00) per month, pay 2,700 (~ $5.20) per month. Again, the benefits of this system are limited by the fact that only a fraction of the population of Kédougou benefits from this service.

[14]*Vacataires* are paid through the health committees (i.e. through the revenue taken in from the sale of medication and of tickets for consultation); this is in contrast to the *agents de santé étatique*, who receive their salaries from the state.

[15]41% of the population of the department of Kédougou is ethnically Pular, another 24% is Mandinka, and only 1.4% is ethnically Wolof (although the Wolof language does extend beyond its ethnic group).

[16]This same source continues that, "In the beginning of the 20th century, associations of mutual aid and health insurance funds had already begun to support the revenue and to finance access to medicines and hospitals for the sick. Presently, with the exception of Mexico, Turkey, and the United States of America, all countries in the OECD (Organization for Economic Co-operation and Development) offer to their respective populations universal health coverage" (Ridde 2004 1). This struck me as an interesting comparison that, in certain respects, places Senegal's health care system on par with that of the United States in terms of health care coverage.

[17]It should be noted, however, that with rolling funds model, the price of medication is passed on to the patients who often pay two to three times what the national pharmacies pay (Klimek & Peters, 1995, 146).

[18]Furthermore, whereas the centre de santé was dirty, in need of repairs, and had two computers for the entire staff of 40 workers, the private pharmacy that I visited in Kédougou had four computers for a staff of three, and the building was new and well kept.

[19]It should be noted that the gap in health care services is not limited to the supply of medication, but is present in all sectors of health care. For

example, in 2003, there were an estimated 7.10 doctors for every 10,000 persons in the public sector; whereas, in the private sector, there were 12.54 doctors for every 10,000 persons (Ibid, 58) — this implies that there are almost twice as many doctors for the minute percentage of the population that can afford private health services, than for the vast majority of the population, 54% of which live below the poverty line (CIA Worldfactbook, Senegal).

[20]This figure is a projection from infection rates of "at risk" populations (truck drivers, hospitalized individuals, pregnant mothers), and it is very likely that the actual infection rate is significantly higher.

[21]The Centre Adolescent of Kédougou was built and financed by USAID.