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HUMAN RESOURCES FOR HEALTH IN THE PRIVATE SECTOR: UNDERSTANDING THE CAPACITY, MOTIVATION AND SKILLS MIX IN COTE D'IVOIRE

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HUMAN RESOURCES FOR HEALTH IN THE PRIVATE SECTOR:
UNDERSTANDING THE CAPACITY, MOTIVATION AND SKILLS MIX IN COTE D'IVOIRE

République de Côte d'Ivoire
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PLAN D'URGENCE AMÉRICAIN:
IVOIRIENS ET AMÉRICAINS, ENSEMBLE CONTRE LE SIDA

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID), the United States Government, or the Government of Côte d'Ivoire.

ABSTRACT

Cote d'Ivore has a diverse mix of private health care providers, ranging from traditional to modern practitioners. As in many sub-Saharan African countries, private providers in Cote d'Ivore can be classified by their for-profit or non-profit commercial orientation and by their type of ownership – for example, individual/group-owned practices and mission/charitable clinics. This assessment measures the size, skills mix, distribution, and growth rate of health care workers in the private sector. The findings are based on a comprehensive survey of 279 private health facilities representing all types of modern facilities. The report addresses four interrelated issues. First, it estimates total number of doctors, nurses, midwives, and laboratory and pharmacy staff currently employed in the private sector. Second, it presents the distribution of health facilities and availability of health services by region. Third, it estimates the number of health care workers entering and leaving the sector; and finally, it measures the average number of new graduates coming out training institutions per year.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CDC	Centers for Disease Control and Prevention
FTE	Full-Time Equivalent
FP	Family Planning
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HIV	Human Immunodeficiency Virus
IMF	International Monetary Fund
INFAS	*Institut National de Formation des Agents de Santé*
MOH	Ministry of Health and Public Hygiene
NGO	Nongovernmental Organization
OI	Opportunistic Infection
PEPFAR	President's Emergency Plan for AIDS Relief
PHR*plus*	Partners for Health Reform*plus*
PMTCT	Prevention of Mother-to-Child Transmission of HIV
TB	Tuberculosis
UFR	*Unités de Formation et de Recherche des Sciences Médicales* (Units of Medical Science Research and Training)
USAID	United States Agency for International Development
VCT	Voluntary (HIV) Counseling and Testing
WHO	World Health Organization

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EXECUTIVE SUMMARY

The role of the private sector has received considerable attention in international health policy discussions. Many governments and local stakeholders, as well as international development institutions, realize that if the global community is to achieve health targets such as the Millennium Development Goal of halting and beginning to reverse the spread of HIV/AIDS, reducing the incidence of malaria and other major diseases by 2015, and reducing child mortality by two-thirds also by 2015, all relevant actors, public and private, must be involved. Recently, sub-Saharan African countries have become increasingly interested in developing and implementing public/private partnerships in the health sector. This focus has stemmed from a desire to increase and improve the rational utilization of the total resources available to the health sector. It has also emerged from their recognition that the private sector is already a significant provider of health services and that substantial amounts of the resources being spent on health care come from private sources (World Health Organization 2000).

Cote d'Ivoire is no exception to this general trend. The processes of reforming the way in which health services are organized and financed includes policies to change the balance of public and private provision and financing of services. The main objectives of structural reforms, which have been part of a more general process of structural adjustment measures including public sector reform through decentralization and privatization of services, are to liberalize the economy and develop a strong private sector.

Despite the policy agenda for private sector development, very little is known about the private health sector in Cote d'Ivoire. Much of what is known is based on anecdotal evidence. Findings of this assessment therefore are a timely contribution to the knowledge base on private sector participation in health care provision and relevant to the development of policies and programs to scale up HIV/AIDS services and improve basic health services delivery.

The purpose of this study was to determine the number of health workers, their skills mix, and their distribution in the private sector in Cote d'Ivoire. Specific objectives included 1) quantification of the number of private facilitates that offer HIV/AIDS-related services and types of available HIV/AIDS services; 2) identification of different types of health care workers available in the private health sector in general and different types of health care workers available for the treatment and preventions of HIV/AIDS in particular; and 3) assessment of geographic distribution of private health facilities providing HIV/AIDS services and the areas in the country that would require particular attention for HIV/AIDS-related services in relation to other health needs such as tuberculosis, malaria, and infant and maternal health.

A random sample of 279 health facilities was selected from a complete list of all the private health facilities compiled by the MOH 2005 census and additional facilities identified by the research team. This frame included a total of 1,144 private health facilities. A total of 11 functional polyclinics and 28 enterprise/enterprise village clinics, operating throughout the country, were considered important to the assessment and therefore were selected with certainty. The remaining sample of 211 facilities was selected from the remaining population of 1,105 facilities.

In selecting a sample of 240 facilities, the facilities were allocated to the 19 regions in proportion to the number of facilities by region. Then, after sorting the list of facilities by type, a systematic sample of

facilities was selected within each region. This selection procedure ensured that the sample had regional representation and also representation for facility type within each region 4.

Five conclusions can be drawn from this study. First, only a small proportion of health facilities (7.8 percent) are providing HIV/AIDS-related services. Polyclinics provide most of the HIV/AIDS-related services (54.5 percent), followed by clinics (27.8 percent) and enterprises and village clinics (25 percent). In terms of providers, nurse and midwife practices, which represent the largest number of private health facilities in Côte d'Ivoire, provide only a small portion of HIV/AIDS-related services.

Second, the total number of health care workers available in the private sector is small. The size of the workforce of the private health sector is approximately 25 percent that of the public sector. About one-third of the private sector care is provided by part-time health workers. Second, our data shows a significant tendency of the private health sector to hire part-time health care workers across all cadres and especially among physician specialists. For example, in 2006, part-time physician specialists outnumbered full-time physician specialists.

Third, most of the private facilities providing HIV/AIDS-related services are located in the urban regions of the Lagunes. This phenomenon is consistent with the public health sector distribution of HIV/AIDS services. Regions 3 (Sud- Comoé, Moyen Comoé, N'zi Comoé, Agnéby, Marahoué, Lacs) and 4 (Montagnes, Denguélé-Baffing, Worodougou, Vallée du Bandama, Savanes, Zanzan), which cover majority of the country, have fewer private facilities providing HIV/AIDS and other health services. HIV/AIDS service provision in the private health sector is low compared to other competing health services, such as malaria, maternal and child health, and FP services, especially in nurse and midwife practices.

It should be noted that private sector facilities generally do not have access to antiretroviral therapy (ART) or to the training necessary to prescribe anti-retroviral drugs and monitor patients undergoing ART. Counseling and testing for HIV also requires specialized training and is not a profitable service to offer in the private sector, so one should not be surprised at the low level of HIV services offered by private sector providers. Of course, tuberculosis and diarrhea are common opportunistic conditions for people living with AIDS, but it is difficult to say what share of these conditions are being treated in the private sector.

Fourth, data from qualitative interviews indicated that incentives such as employer contributions to transportation, housing, etc. are not a major factor in why individuals decide to work in the private sector. Salary and schedule flexibility, however, were identified as the most important incentives by respondents. Another interesting finding was that majority of those in the private sector would prefer to work in the public.

Finally, there has been a steady growth in the number of students enrolling in the health training institutions since 2004. However, the increase in the number of instructors hired was not commensurate with it, thereby leading to questions about the quality of education having been compromised.

In order to strengthen the private sector, the authors make the following recommendations:

1. The government should closely examine innovative ways to actively involve private nurse and midwife practices in the provision of HIV/AIDS services. Based on the large number of nurse and midwife practices, serious consideration should be given to policies and programs to scale up HIV/AIDS services in these practices. Those could include adding HIV/AIDS care to the curriculum

of nursing and midwifery schools and providing in-service training and participation to seminars or workshops on HIV/AIDS services. Another strategy for increasing the level of training among private providers may be to require HIV training as a condition for re-licensure. Private providers who have attained sufficient training and experience could also be given access to subsidized antiretroviral drugs or drugs for treating opportunistic infections.

2. The government should develop strategies to encourage the establishment of private health practices in study regions 3 and 4. An assessment of the barriers to provision of practices in these regions is also necessary to determine the most effective strategies. Those strategies could include government contracting out provision to private providers, increasing provider access to training, providing subsidized medicines, providing access to credit to start up or expand private practice, or providing tax exemptions.

3. More research is needed to determine which private providers are most sought by consumers seeking HIV/AIDS services. Special efforts should then focus on these providers. An assessment of the skill level and the quality of care of these providers may also be needed to determine how much additional training is needed or whether their scopes of practice can be expanded to include provision of HIV services.

4. Traditional providers were not included in the scope of this study, but experience from other countries in sub-Saharan Africa shows that these providers are highly sought after, especially in rural areas. While it may not be appropriate to use traditional providers for HIV service delivery, their support may be needed to increase referrals to appropriate public or private facilities.

1. INTRODUCTION AND BACKGROUND

In recent years, the role of the private sector in health care has received considerable attention in international health policy discussions. Many governments and local stakeholders, as well as international development institutions, realize that if the global community is to achieve health targets such as the Millennium Development Goals of halting and beginning to reverse the spread of HIV/AIDS, the incidence of malaria and other major diseases by 2015, or reducing child mortality by two-thirds also by 2015, all relevant actors, public and private, must be involved.

Many sub-Saharan African countries have become increasingly interested in developing and implementing public/private partnerships in the health sector. This focus has stems from a desire to increase and improve the rational utilization of the total resources available to the health sector. It has also emerged from a recognition of the fact that the private sector is already a significant provider of health services and that substantial amounts of resources being spent on health care come from private sources (World Health Organization [WHO] 2000).

Cote d'Ivoire is no exception to this general trend. The processes of reforming the way in which health services are organized and financed includes policies to change the balance of public and private provision and financing of services. Some of the main objectives of structural reforms, which have been part of a more general process of structural adjustment measures including public sector reform through decentralization and privatization of services, are to liberalize the economy and develop a strong private sector. Structural adjustment measures initiated by the International Monetary Fund (IMF) and the World Bank were implemented in Cote d'Ivoire in the early 1990s. These measures focused primarily on assisting the government to correct financial imbalances between revenues and expenditures and to establish a sound basis for sustainable economic growth (IMF 1998). Although these policies had some success in stimulating renewed and sustained economic growth in Cote d'Ivoire, it is the process of public sector reform that has significantly influenced the development of the private health sector.

Despite a rebound in the economic growth during the 1990s, the Ivorian economy remains vulnerable and continues to face certain constraints that hamper the country's economic and social development. First, the public finance situation remains fragile and is marked by serious cash-flow difficulties. Second, private sector development still needs support. Efforts should be intensified to create a climate that is more supportive of the private sector, so that it can fully play its role as the main engine of economic growth. Third, further efforts are needed to significantly reduce poverty and to improve access to basic social services (World Bank 2003).

Despite the policy agenda for private sector development, very little is known about the private health sector in Cote d'Ivoire. Much of what is known is based on anecdotal evidence. Findings of this assessment therefore are a timely contribution to the knowledge base on private sector participation in health care provision and are relevant to the development of policies and programs to scale up HIV/AIDS services and improve basic health services delivery.

1.1 PRIVATE HEALTH CARE PROVISION

Although a comprehensive typology of private health care providers must await the outcome of a robust country-level inventory, currently available information suggests the existence of a diverse mix of private health care providers, ranging from traditional to modern practitioners and individual or ambulatory practices to large hospitals (Hursh-Cesar et al. 1994).

Private providers can be classified by their for-profit or non-profit commercial orientation and by their type of ownership – for example, individual/group-owned practices and mission/charitable clinics. The for-profit private providers include individual- and group-run hospitals and clinics, privately owned health centers, individual pharmacies, clinical laboratories, and traditional practitioners such as herbalists, bone settlers, and birth attendants. Religious and nongovernmental organization (NGO) health centers and hospitals constitute non-profit providers (Hanson et al. 1994).

Together, these privately provided services are a growing part of Cote d'Ivoire's health delivery systems. From a public policy point-of-view, the non-profit private providers (faith-based organizations and NGOs) and informal providers (drugs sellers and traditional healers) may be some of the most important stakeholders of the private sector. Such providers are best able to provide a basic package of preventive and curative services to the poor and are often located in rural areas of the country. Nurse and midwife practices should also be given careful consideration as they constitute the largest percentage of private health facilities and thus have the greatest ability to provide services to patients (see Table 1 in the next section) (WHO 2006).

1.2 ORGANIZATION OF THE MODERN PRIVATE HEALTH SECTOR

Data from the 2005 census of the private health sector, conducted by the Ministry of Health and Public Hygiene (MOH) estimates the total number of private health facilities at 1,120 (MOH 2005). However, in 2006, our research team identified 24 additional private health facilities, bringing the total to 1,144. Table 1 shows the total number of private health facilities included in our study sample. The facilities are organized into six categories for the needs of this study. It is important to note that ophthalmologist practices, pharmaceutical and laboratory facilities, and Chinese clinics were not included in the total number of facilities represented our survey.

TABLE 1: NUMBER OF PRIVATE HEALTH FACILITIES

Facility Type	Number	Percentage
Polyclinics	11	0.97
Clinics	75	6.6
Medical Centers & Practices	175	15.4
Nurse & Midwife Practices	813	71.6
Social Health Facilities (Social Medical Centers and Counseling and Ambulatory Centers)	42	3.7
Enterprise/ Enterprise Village Clinics	28	2.46
Total	1,144	100.00

Sources: MOH 2005 and current assessment

1.2.1 MEDICAL FACILITIES

The medical facilities category comprises polyclinics, clinics, medical centers and medical practices. Each category has specific qualifications that determine the type of medical facility (see Annex A).

Polyclinics are facilities providing outpatient medical services and hospitalization in various specializations. They have equipment and a bed capacity for 60 or more patients. Table 2 (see Section 1.2.5) shows the distribution of private polyclinics by administrative region. The majority of polyclinics (nine of the 11 polyclinics) are located in the Lagune 2 region.

A *clinic* is defined as a facility providing general and specialized outpatient medical care and hospitalization services in three areas of specializations. They have a capacity of 15 to 60 hospital beds. Like the distribution of polyclinics, most of the clinics are located in Lagune 2 (49.3 percent), followed by Lagune 1 (18.7 percent) (see Table 2).

Medical centers are defined as facilities that provide medical consultation, diagnosis and ambulatory care. They can keep patients under observation for several hours but do not offer hospitalization services. *Medical practices* are facilities that also provide ambulatory medical care in one specialization but offer neither patient observation nor hospitalization services.

1.2.2 ANCILLARY MEDICAL FACILITIES

Ancillary medical facilities are divided into three sub-categories:

Nurse practices are run by nurses and provide preventive and curative health care. They offer patient observation services.

Midwife practices (also known as pre- and post-natal care practices) are run by midwives and provide curative and preventive care to pregnant women and women who just gave birth. They also offer patient observation services.

Village centers (or health huts) are operated by community health workers and provide curative care, prevention services, and health education.

Doctors supervise ancillary medical practices, but do not work there.

1.2.3 SOCIAL HEALTH FACILITIES

Social health facilities include the following two types of facilities:

Social medical centers provide health education, and diagnostic and curative care services. They are run by doctors assisted by nurses and social workers.

Counseling and ambulatory care centers provide counseling, testing, treatment, and home-based care. These facilities are directed by a doctor or a nurse.

1.2.4 ENTERPRISE OR COMPANY HEALTH CENTERS

Ivoirian law mandates that all enterprises (large companies) in Côte d'Ivoire must create an *enterprise infirmary or medical center* to provide health services for their employees. While these medical centers are intended to provide services to company personnel, it is not uncommon for the centers to be open to the public.

Company health centers may also take the form of *enterprise village clinics*. These facilities provide services to both company employees and the entire population located at the company's site. The enterprise village clinics play an important role in providing medical services, health education, and other social services in their intervention zones.

1.2.5 DISTRIBUTION OF HEALTH FACILITIES BY REGION

Table 2 shows the distribution of private health facilities by administrative region in Cote d'Ivoire. Data indicate that the majority of the facilities are concentrated in Lagune 1, Lagune 2, and Bas Sassandra. It is interesting to note that only ancillary medical facilities are dispersed throughout the country, particularly in rural areas.

TABLE 2: DISTRIBUTION OF MEDICAL FACILITIES BY ADMINISTRATIVE REGION

	Polyclinics	Clinics	Medical Centers & Practices	Nurse & Midwife Practices	Social Medical Centers	Enterprise/ Village Clinics	Total
Agneby			1	12	1	2	16
Bas Sassandra		6	10	195	21	1	233
Denguele-Baffing				5	1		6
Fromager		4	2	20			26
Haut Sassandra			3	31	3		37
Lacs		6	2	11			19
Lagune 1	1	14	61	176	3	13	268
Lagune 2	9	37	75	205	4	7	337
Marahoue			1	19			20
Montagnes			2	1			3
Moyen Cavally		2		7			9
Moyen Comoe		2	6	11		3	22
N`Zi Comoe		1		8			9
Savanes		1	2	5	3	1	10
Sud Bandama		1		41	4		46
Sud Comoe			3	19			22
Vallee Bandama	1		7	45	2		55
Worodougou							0
Zanzan		1		2		1	4
Total	11	75	175	813	42	28	1144

Note: Blank boxes indicate that no facilities of that type exist in that region.

The private sector in general, and private enterprise and village clinics in particular, play an important role in providing health care, especially where public facilities do not exist. Enterprise clinics, for example, are key features in the Ivoirian health care system. In remote rural areas, they not only provide health care to employees and their relatives, but they also create social infrastructures encompassing education and other social functions. In urban areas, large enterprises provide on-site health care services that are legally mandated.

1.3 HUMAN RESOURCES

In Cote d'Ivoire, the majority of new graduates have traditionally been recruited by the public sector. However, due to declining socio-economic conditions and structural adjustment measures, the government has restricted recruitment of civil servants since 1996. The civil service entrance examination, introduced in 1996, acts as the "gate keeper" for health professionals seeking in the public sector employment. For example, in 2001 and 2004, the average number of health workers hired into the public sector represented only 40 percent of the MOH's expressed need (Butera et al. 2005).

Table 3 shows the number of medical graduates coming from the *Unité de Formation et Recherche des Sciences Médicales* (UFR) in 2004. Of the 434 graduates, only 164 (38 percent) joined the civil service. We speculate that the remaining 270 (62 percent) of new graduates entered other sectors, went overseas, or remained unemployed.

TABLE 3: TRAINING INSTITUTION GRADUATES VERSUS CIVIL SERVICE HIRES 2004

Staff Types	UFR Graduated in 2004	Recruited into Civil Service	Not Employed by Civil Service	
			Number	Percentage
Doctors	312	117	195	72.22
Pharmacists	96	32	64	23.70
Dental Surgeons	26	15	11	4.07
Total	434	164	270	100.00

Studies indicate that the armed conflict that began in 2002 in Cote d'Ivoire has had a considerable effect on the health sector (AIDS Care 2006). Dramatic decreases in human resources have occurred across all qualifications in both the public and private health sectors in conflict zones. For example, the total number of public sector health workers in the northern part of the country decreased by three-quarters during the conflict period. Greater reductions were noted in the central and western geographic regions (88 percent). This situation compromises the ability of the country to cope with the HIV/AIDS epidemic and other resurgent diseases. In some of the most affected conflict zones, health services are provided solely by private sector providers, such as missions and other NGOs (AIDS Care 2006).

2. OBJECTIVES AND METHODOLOGY

2.1 OBJECTIVES

The purpose of this study was to assess the number of private sector health workers public sector in Cote d'Ivoire, their skills mix, and their distribution. Specific objectives included:

1) quantification of the number of private facilitates that offer HIV/AIDS-related services and types of available HIV/AIDS services;

2) identification of different types of health care workers available in the private health sector in general and different types of health care workers available for the treatment and preventions of HIV and AIDS in particular; and

3) assessment of the geographic distribution of private health facilities providing HIV/AIDS services and the areas in the country that require particular attention for HIV/AIDS-related services in relation to other health needs such as tuberculosis (TB), malaria, and infant and maternal health. A detailed technical description of the methodology is found in Annex B.

The findings from this study will be used in collaboration with the recent assessment of public sector human resources for health conducted in 2005 to yield a more complete picture of human resource constraints facing the country in its efforts to combat HIV/AIDS in the coming years, while maintaining basic health care services.

2.2 SAMPLING APPROACH

The objective of the sampling approach was to select a representative sample of nurse and midwife practices, medical centers and practices, clinics, social medical centers, enterprise clinics, and polyclinics that would provide reliable information on the manner in which health services are being delivered to the Ivorian population. The target population for this survey was all private health facilities in the 19 regions of the country. Facilities such as ophthalmologist practices, pharmaceutical and laboratory facilities, dentist practices, and Chinese clinics were not included in the target population. The research team sought guidance from the steering committee (Annex C) on the number of facilities to be selected, what information to collect, and how to use the information.

A random sample of 279 health facilities was selected from a complete list of all the private health facilities compiled by the MOH 2005 census and additional facilities identified by the research team. This frame included a total of 1,144 private health facilities. A total of 11 functional polyclinics and 28 enterprise/enterprise village clinics, operating throughout the country, were considered important to the assessment and therefore were selected with certainty. The remaining sample of 211 facilities was selected from the remaining population of 1,105 facilities.

In selecting a sample of 240 facilities, the facilities were allocated to the 19 regions in proportion to the number of facilities by region. Then, after sorting the list of facilities by type, a systematic sample of

facilities was selected within each region. This selection procedure ensured that the sample had regional representation and also representation for facility type within each region as shown in Table 4.

TABLE 4: NUMBER FACILITIES IN THE SAMPLE BY TYPE

Type of Facility	Number in the Population	Number in the Sample
Polyclinics	11	11
Clinics	75	23
Medical Centers and Practices	175	50
Nurse & Midwife Practices	813	148
Social Medical Centers	42	19
Enterprise/Enterprise Village Clinics	28	28
Total	1,144	279

2.3 DATA COLLECTION INSTRUMENTS

Three interrelated data collection questionnaires were developed. This study adapted survey instruments utilized in the previous public sector assessment, as there were many parallels in types of questions asked. These questions were augmented with additional questions specific to the private sector in Cote d'Ivoire. An initial draft was developed after extensive consultations with a broad range of key stakeholders regarding the implementation of this activity.

The first questionnaire was designed to collect quantitative information at the health care facility level with respect to the total stock of health care workers, type of services provided including HIV/AIDS, tuberculosis, malaria, and maternal and infant health, number of incoming and outgoing staff at each facility, average number of patients seen and average time spent per patient-visit for each of the services related to the five focus areas. The second questionnaire was designed to collect qualitative information about the primary reasons why respondents were practicing in the private sector. The final questionnaire was developed to assess types of programs offered, content of the curriculum, number of instructors and students, and the frequency of curriculum revision in the training institutions. The questionnaire was tailored each training institution.

2.4 DATA COLLECTION

Data collectors (Annex D) were trained and organized into seven groups. Each group was responsible for conducting interviews in the regions assigned. Five groups were assigned to the regions in the south of the country and two groups to the regions in the north. A supervisor assigned to each group ensured the follow-up for the data collection with their data collectors. The total duration of the data collection process was 12 days, with each group covering at least two facilities per day.

2.5 DATA ANALYSIS

Statistical and descriptive analysis were conducted using SAS version 9.1 (Cary, North Carolina) and PROC SURVEYMEAN with finite population correction. Analysis was conducted by treating the data as "stratified random sampling," consistent with our sampling design, with the stratum being the cross classification of type of facility and region (groups of regions).

The estimation model used in deriving full-time equivalents (FTE) requirements is based on staffing projections that are commonly used in assessments of human resources for health. In order to estimate the FTE, we multiply the average time staff spend in providing care per patient by the target number of patients receiving the service, yielding overall human resource needs. These numbers are then expressed as FTE. In Côte d'Ivoire, it is assumed that workers have 211 days (1,688 hours) per year of patient interface time (i.e., including non-service delivery work time, such as administrative work or down time).

3. FINDINGS AND DISCUSSION

This section provides key findings and detailed discussions on the availability, composition, and trends of human resources for health in the private sector. The findings have been organized to portray human resources at the facility level, services provided, time spent, attrition, and reasons for working in this sector.

Section 3.1 presents an overview of the private facilities, including the major characteristics of private facilities providing HIV/AIDS services, the location of private facilities providing HIV/AIDS services, the types of HIV/AIDS services offered, and additional basic health services offered by HIV/AIDS facilities.

Section 3.2 focuses in on the stock and trends of private sector health workers. Health care worker trends examined in this section include the growth rates in the number of private sector health care workers, the amount of time health care workers spend on HIV/AIDS services, and the attrition rates.

Section 3.3 presents the results of a qualitative assessment of private health care workers. The data describes worker perceptions and sector preferences, including reasons why health care workers joined or left the private sector.

Section 3.4 examines three training institutions, including their students, instructors, and curriculums.

Section 3.5 gives a comparative analysis of the findings from the assessments of private and public sectors. Facilities, stock of health care workers, the composition of the health sector workforce, the geographic distribution of health workers, and the HIV/AIDS services provided by private sector health care workers are examined with reference to previously conducted research findings from the public sector (Butera et al. 2005).

Sections 3.6-3.8 look at HIV/AIDS services provided by different cadres of health care workers, at trends in the stock of workers, and at the geographic distribution of health facilities.

3.1 CHARACTERISTICS OF PRIVATE FACILITIES PROVIDING HIV/AIDS SERVICES

3.1.1 TYPES OF SERVICES PROVIDED

Of 1,144 facilities, 91 (7.9 percent) provide HIV/AIDS-related services to clients. As Table 5 shows, the categories of facilities providing the most HIV/AIDS-related services are polyclinics (54.6 percent of which provided the services), clinics (27.8 percent), and enterprise and village clinics (24.4 percent). Ten percent of medical centers provide the services.

Only a small proportion (3.9 percent) of nurse and midwife practices, which constitute the largest cadre of private health facilities, provide HIV/AIDS-related services. This can be explained in part by the fact that a large number of these facilities are located in rural and remote areas of the country, where the population is dispersed and the demand for services is low. Another reason could be a lack of nurses and midwives who are trained to provide HIV/AIDS-related services.

TABLE 5: WEIGHTED FACILITY PERCENTAGES BY TYPE OF SERVICES PROVIDED (PRIVATE SECTOR)

Facility Type	HIV/AIDS percent)	Tuberculosis percent	Malaria percent	Maternal Health percent	Family Planning percent	Child Health (< 5 yrs percent
Total (N = 1144)	7.9	2.5	99.2	26.3	13.9	59.6
Polyclinic (N = 11)	54.6	18.2	100	72.7	54.6	100
Clinic (N = 75)	27.8	11.1	94.4	70.8	40.3	59.7
Medical Centers (N = 175)	10.1	6.3	100	53.2	32.9	74.1
Nurse & Midwife Practices (N=813)	3.9	1.0	100	16.6	6.7	55.1
Socio-Medical Centers (N = 42)	24.4	0	100	31.7	22.0	92.7
Enterprises or Village Clinics (N = 28)	25.0	3.6	85.7	28.6	32.1	50.0

Private facilities also provide basic health services. Polyclinics for example, not only provide the largest portion of HIV/AIDS services, but also of TB and maternal health care compared with other facility types. Table 5 gives the weighted percentages of type of services provided in the private sector of health care by type of facility. The percentages shown in the table are weighted percentages. The weighted percentages for each row in the table were obtained as follows: The number of facilities in the sample in each cell in each row was multiplied by the sampling weight to get the estimated number of facilities in the population in that cell. Then the estimated number of facilities in each cell was divided by the total number of facilities in the population.

Nearly all private facilities (99.2 percent) provide malaria services and about 86 percent provide maternal and child health services. Surprisingly, the percentage of private facilities providing family planning (FP) and TB services is low, 13.9 percent and 2.5 percent respectively; this might be because most clients would seek FP and TB services in the public sector, where the services are low cost or free of charge.

3.1.2 LOCATION OF PRIVATE FACILITIES PROVIDING HIV/AIDS AND OTHER HEALTH SERVICES

Table 6 shows the location of private facilities providing HIV/AIDS and other health services by the four geographic regions used by this study[1]. Most facilities are concentrated in regions 1 and 2, the Lagunes, in contrast to the number in regions 3 and 4, which cover the rest of the country including the northern region. More specifically, almost half of the facilities that provide HIV/AIDS services are located in Lagune 1 (30.4 percent) and Lagune 2 (16.3 percent). In region 1 (Lagune 2), all 28 facilities providing HIV/AIDS services also offer malaria and child health services. Eighty-nine percent of these facilities provide maternal health services, and more than half of them (53.6 percent) provide FP services. In

[1] Table 6 shows how study regions comprise Cote d'Ivoire administrative regions.

region 2 (Lagune 1), all 15 facilities providing HIV/AIDS services also offer TB, malaria, maternal health, and FP services.

The profit-seeking nature of the private sector could explain this large concentration of private facilities providing HIV/AIDS and other health services in the Lagunes – as the area of greatest economic activity and population density (more than 4 million people), it also offers the greatest customer base for private providers.

Region 4, which covers mostly the northern part of the country, has the least number of private facilities. This might be related to the armed conflict that afflicted the country in the past, which forced many facilities in the north to close or move to other locations.

TABLE 6: LOCATION BY STUDY REGION AND TYPES OF "OTHER" SERVICES PROVIDED BY OF PRIVATE HEALTH FACILITIES PROVIDING HIV/AIDS SERVICES (IN PERCENT OF FACILITIES PROVIDING SERVICE)

Region	Tuberculosis	Malaria	Maternal Health	Family Planning	Child Health (<5 years)
Region 1* (N=28)	3.6	100	89	3.6	100
Region 2** (N=15)	100	100	100	100	66.7
Region 3*** (N=26)	3.9	100	69	11.5	92
Region 4**** (N=22)	18.2	100	50	31.8	72.7

*Lagune 2 ; ** Lagune 1 ; *** Sud Comoe; Moyen Comoe; N'Zi Comoe; Agneby; Marahoue; Lacs ****Montagnes; Denguele-Baffing;Worodougou; Valle Bandama; Savanes; Zanzan

3.1.3 TYPES OF HIV/AIDS SERVICES IN PRIVATE FACILITIES

Diverse types of HIV/AIDS services are offered by private health facilities. Of the 91 facilities providing HIV/AIDS services, 86.8 percent offer voluntary counseling and testing (VCT) services, 53.9 percent offer antiretroviral therapy (ART), 41.8 percent offer prevention of mother-to-child transmission (PMTCT) services and 44 percent offer TB services. Table 7 shows the types of HIV/AIDS services offered by the 91 private facilities that provide these services.

Medical centers provide the highest percentages of the various types of HIV/AIDS services. All 16 centers offer VCT, 68.8 percent provide ART, 81.3 percent offer PMTCT, and 62.5 percent offer TB services. Among clinics, only three (15 percent) offer all types of HIV/AIDS-related services. Surprisingly, nurse and midwife practices provide the lowest percentage of PMTCT services, only 9.1 percent.

The low percentages of HIV/AIDS services offered by clinics and nurse and midwife practices could be related to a shortage of adequately trained personnel to provide the services and/or the lack of equipment and supplies required to perform the services.

TABLE 7: TYPES OF HIV/AIDS SERVICES PROVIDED BY FACILITIES PROVIDING HIV/AIDS SERVICES (IN PERCENT OF FACILITIES PROVIDING SERVICE)

Facility Type	Voluntary Counseling and Testing	Antiretroviral Treatment	Prevention of Mother to Child Transmission	Tuberculosis as an Opportunistic Infection
Total (N = 91)	86.8	53.9	41.8	44
Polyclinics (N = 6)	100	50	66.7	33.3
Clinics (N = 20)	15	15	15	15
Medical Centers (N = 16)	100	68.8	81.3	62.5
Nurse & Midwife Practices (N = 33)	90.9	27.3	9.1	33.3
Socio-Medical Centers (N = 10)	40	60	60	60
Enterprise Village Clinics (N = 7)	100	85.7	57.1	42.9

3.1.4 BASIC HEALTH SERVICES PROVIDED BY HIV/AIDS FACILITIES

As discussed above, facilities providing HIV/AIDS services also provide other basic health care services. These competing needs must be considered in allocating the limited human resources available. In scaling up HIV/AIDS service provision in private facilities, efforts should be made to continue to deliver the other needed health care services.

Table 8 shows the competing basic health services provided by the 91 private facilities delivering HIV/AIDS services. All the polyclinics providing HIV/AIDS services also provide malaria services and maternal and child health services. All the other types of private facilities providing HIV/AIDS services also provide extensive malaria services (about 100 percent of all types of facilities) and maternal and child health (between 55 percent and 94 percent of facilities). FP and TB services are also provided to a certain extent, with the exception of socio-medical centers, which do not provide any TB or FP service.

TABLE 8: BASIC HEALTH SERVICES PROVIDED BY HIV/AIDS FACILITIES (IN PERCENT OF FACILITIES PROVIDING SERVICE)

Facility Type (N = 91)	Tuberculosis	Malaria	Maternal Health	Family Planning	Child Health (<5 years)
Polyclinics (N=6)	100	100	100	83	100
Clinics (N=20)	25	100	80	45	55
Medical Centers (N= 16)	62.5	100	94	69	94
Nurse & Midwife Practices (N=33)	9.1	97	64	27	90
Socio-medical Centers (N=10)	0	100	60	0	90
Enterprises or Village Clinics (N = 7)	14.3	100	57	71	71

3.2 CURRENT STOCK AND TREND OF HEALTH CARE WORKERS

3.2.1 STOCK OF HEALTH CARE WORKERS IN THE PRIVATE SECTOR IN 2006

Table 9 shows the total human resources stock available in the private health sector in 2006. According to our survey, there are about 3,404 FTE health workers. Of this total, doctors constitute the largest share 1,463 (42.9 percent), followed by nurses 1,431 (42 percent); the remaining 510 (15 percent) is made up of pharmacists, midwives, and laboratory technicians. It is very interesting to note that the ratio of nurses to physicians is almost 1:1, a phenomenon rarely seen in the public sector.

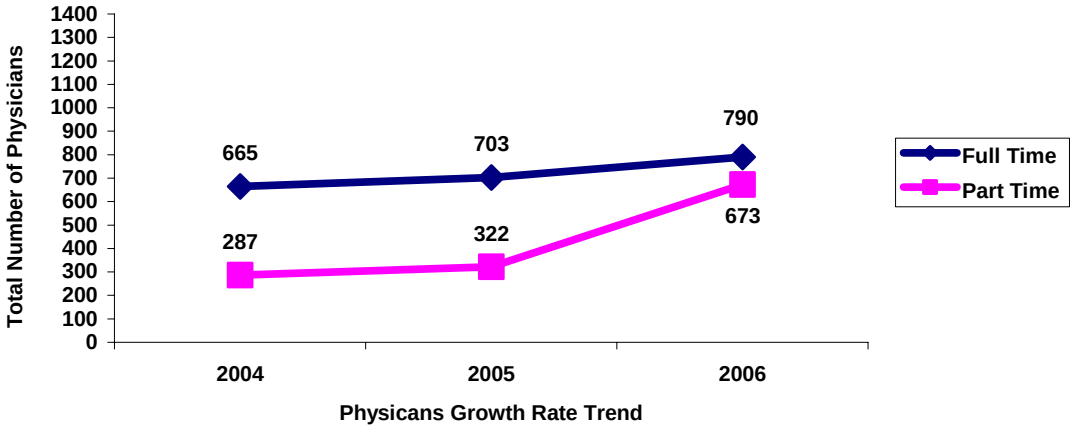
TABLE 9: PRIVATE SECTOR STOCK OF HEALTH CARE WORKERS (FTE)

Type of HCW	2004				2005				2006*			
	Full-time Workers	Part-time Workers (n)	FTE for Part-time Workers	Total FTE	Full-time Workers	Part-time Workers (n)	FTE for Part-time Workers	Total	Full-time Workers	Part-time Workers (n)	FTE for Part-time Workers	Total
General physicians	283	278	82	365	278	274	80	358	364	313	105	469
Physician specialists	382	870	205	587	425	1043	242	667	426	1193	568	994
Physician total	665	1148	287	952	703	1317	322	1025	790	1516	673	1463
General pharmacists	28	7	1	29	27	2	0	27	24	2	0	24
Pharmacy specialists	47	2	1	48	49	2	1	50	44	2	1	45
Pharmacy total	75	9	2	77	76	4	1	77	68	4	1	69
Nurses	1029	361	259	1288	1032	382	211	1243	1055	379	226	1281
Nursing Specialists	118	138	29	147	118	155	30	148	118	160	32	150
Nurses total	1147	499	288	1435	1150	537	241	1391	1173	539	258	1431
Midwives	130	155	44	174	145	185	62	207	133	204	59	192
Midwife Specialists	10	8	3	13	10	8	3	13	51	8	3	54
Midwives Total	140	163	47	187	155	193	65	220	184	212	62	246
Laboratory Technicians	97	61	20	117	98	64	9	107	112	62	83	195
Total	2126	1880	644	2768	2182	2115	638	2820	2327	2323	1077	3404

3.2.2 GROWTH RATE OF STOCK OF HEALTH CARE PROFESSIONALS FROM 2004 TO 2006

Over the past three years, the private health sector has seen significant increases in the number of both full- and part-time workers. The total FTE increased by 22.7 percent, to 3,404 workers in 2006 from 2,768 in 2004. This growth rate was driven primarily by an increase of nearly 70 percent among part-time workers, in particular, by part-time physicians. A moderate increase of 8.1 percent for full-time workers was also observed. For example, the number of full-time doctors grew from 665 (2004) to 790 (2006) as shown in Figure 1. Slow but consistent growth rates are also observed across all cadres during the same period.

FIGURE 1: PRIVATE SECTOR PHYSICIAN GROWTH RATE TREND



3.2.3 HEALTH WORKER TIME SPENT ON HIV/AIDS SERVICES

It is surprising to see that most health care workers spend only a small fraction of their time on HIV/AIDS services. For example, in 2006, a total of 3,404 FTE was devoted to all health services in 2006 as of time of the survey. Of this FTE, only 124 (3.6 percent) was spent on HIV/AIDS services.

Nurses constitute a majority (44 percent) of the total health sector FTE spent on HIV/AIDS services, followed by midwives (38 percent) and doctors (general and specialists) (12.5 percent). It is surprising to note that neither laboratory technicians nor pharmacists reported any FTE contributions to HIV/AIDS services.

Nurses' substantial contribution to HIV/AIDS care is not surprising considering that they represent 36 percent of total FTE of health care delivered. Midwives' contribution also is substantial: Midwives contribute only 6 percent of total health care FTE, but spend 25 percent of their time performing HIV/AIDS services. Among health care workers they devote the largest proportion of their time to HIV/AIDS services. Nurses as an aggregate category spend only 13 percent of their time performing HIV/AIDS services.

3.2.4 ATTRITION RATES

Attrition rates[2] among health care workers are a focal point for efforts to address shortages in human resources for health. Our study showed that attrition rates among all private sector health care workers except pharmacists declined between 2004 and 2005. Attrition rates for full-time physicians declined from 4.3 percent in 2004 to 4.0 percent in 2005, while the rate for nurses declined from 4.0 percent to 1.1 percent over the same period. There was a sharp rise in attrition among pharmacists from 1.4 percent (2004) to 7.6 percent (2005). Pharmacists listed lay-offs and retirement as their principle reasons for leaving the private sector.

3.3 QUALITATIVE ASSESSMENT OF HEALTH CARE WORKERS IN PRIVATE SECTOR FACILITIES

This section describes the key findings of the qualitative assessment related to the motivation and attitudes of health care workers in the private sector.

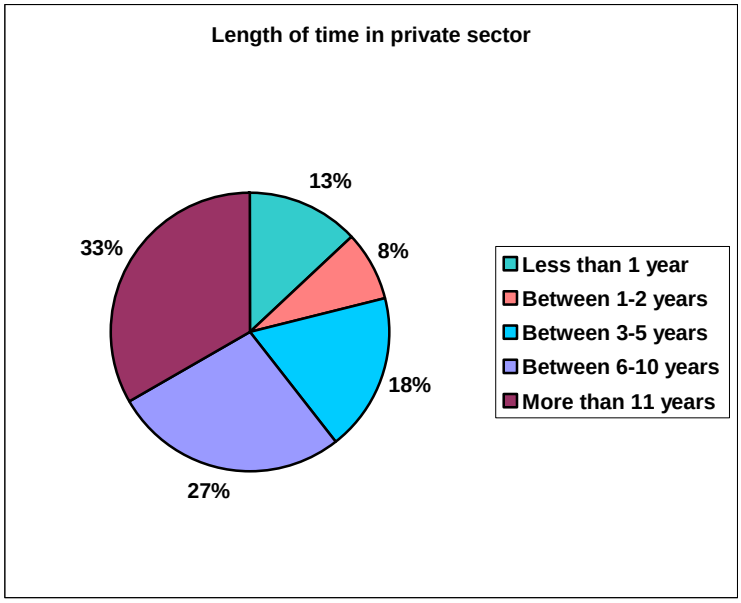
3.3.1 CHARACTERISTICS OF PRIVATE SECTOR HEALTH WORKERS

The study results indicate that new graduates represent the majority of new employees. In 2006, 39 percent of new health care workers were new graduates. Another 35 percent of new employees came from within the private sector, and 23 percent came from the public sector. A major reason for the large number of newly graduated workers entering the private sector is the mandatory civil service entrance examination, instituted in 1996 (see discussion in Section 1.3).

Findings further suggest that, once employed, workers tend to stay in the private sector for long periods (Figure 2). Of the 274 health care workers interviewed, 60 percent had worked in the private sector for six or more years (27 percent between six and 10 years and 33 percent for more than 11 years). Only 8 percent of respondents had worked for the private sector between one and two years, and 13 percent for less than one year.

[2] Attrition rates measure the number of those leaving the private sector as percent of total staff.

FIGURE 2: LENGTH OF TIME EMPLOYED IN THE PRIVATE SECTOR



3.3.2 REASONS WHY HEALTH CARE WORKERS LIKE THE PRIVATE SECTOR

Of the 274 health workers interviewed, 214 respondents (78 percent) said they liked working in the private sector. While a small number of respondents reported that they would like to work in the public sector, 72 percent of respondents explained that although they are interested in a position in the public sector, their qualifications do not correspond to the employment requirements or they did not qualify for the public sector examination. Had it not been for the stringent public entrance examination, we speculate that there would be greater numbers of workers in the public sector.

As Table 10 shows, the three major reasons why health care workers like working in the private sector are: flexible work schedules (26 percent), sufficient wages (22 percent), and training opportunities (14 percent).

The reasons cited with the least frequency were: "incentives such as internet and contributions towards transportation, school fees for employee's children, and housing" (10 respondents said this was important and only 0.6 percent of those people ranked this as their primary reason for liking private sector employment), "potential of advancement and existence of a career plan" (2.7 percent gave this as a reason and 0.2 percent gave this as their number one reason), and finally, "good management" (six marked this as a reason and 0.6 percent ranked this as primary). Respondents also listed various "other" reasons; the most common were, "Did not have a choice", "Did not qualify for the public sector", and "Freedom".

This information should be taken into account when policymakers consider a strategy for human resources development.

TABLE 10: REASONS WHY RESPONDENTS LIKE WORKING IN THE PRIVATE SECTOR

Reason * (total number interviewed =274)	Percent of respondents who indicated this as a reason for liking the private sector	Percent of those respondents who ranked this as their # 1 reason
Good management	2.1	0.6
Potential of advancement and existence of a career plan	2.7	0.2
Incentives for such things are transportation, internet, school fees for employee's children, and housing	3.5	0.6
Health Insurance is offered	4.4	0.5
Compensation is offered with fees from services provided	5.1	0.7
The institution has function equipment	5.9	2.3
I like to make the choice of where I work	9.7	4.3
The work load is not too much	11.1	1.1
There are opportunities for training	14.3	6.9
The salary is sufficient	22.0	13
The work schedule is flexible	26.4	13
Other (Please specify)	57.5	45.5

3.3.3 REASONS WHY HEALTH CARE WORKERS LEFT THEIR PREVIOUS EMPLOYMENT

Reasons listed by respondents for leaving their previous employment are low salaries (24 percent), poor management (7 percent), and lack of training opportunities (4.7 percent). Other reasons included retirement, the working environment, and closure of the previous facility.

Incentives ranked low when explaining why they left their previous employment. Only five persons gave lack of incentives as a reason for leaving and of those people, no one ranked it first Lack of health insurance received the fewest marks (1.1 percent), and no one ranked it number one.

3.3.4 REASONS WHY PRIVATE HEALTH CARE WORKERS DO NOT LIKE THE PUBLIC SECTOR

The most common reason that private sector employees cited for lack of desire to work in the public sector was insufficient salaries (18 percent); 10 percent listing this as the most important reason. Lack of work schedule flexibility was the second reason (10 percent, with 6 percent ranking it first). Only 1.6 percent said that the workload is too great; 1.8 percent gave the lack of health insurance as a reason; and 3.7 percent mentioned the lack of incentives such as contributions toward transportation, schools fees, and housing and internet access at work. None of the health care workers chose "Not interested in working in rural areas" as a reason.

From this data, it is clear that salary is an important consideration, if not the most important consideration, for health professionals in the private sector. It is both a reason to remain at a facility and a reason to leave.

3.3.5 INCENTIVES

As a way of attracting and retaining staff, employers often offer incentives such as contributions to housing and transportation expenses. Roughly half of survey respondents received contributions for housing (48 percent) and transportation (51 percent). However, as discussed previously, when asked to indicate why they liked or disliked a particular sector or to give reasons why they left previous employment, incentives were not deemed important. Based on this information, one may question the effectiveness of incentives on increasing and sustaining current and future levels of human resources for health in the private sector.

3.3.6 REMUNERATION AND WORKLOAD OF HEALTH PERSONNEL

The majority of private sector health professionals are paid based on the number of clients they see per period (57 percent, or 156 of the 274 interviewed). When asked to report the number of clients they saw per day, the vast majority (80 percent) responded that they see only 1-10 patients. Fourteen percent said that they see 11-20 patients. Data indicate there may be room to expand patient volume in some facilties.

3.4 TRAINING INSTITUTIONS: STUDENTS, INSTRUCTORS, CURRICULUM, AND HIV/AIDS EDUCATION

In Côte d'Ivoire, institutions that train health workers are primarily run by the public sector. Two major public-owned health training institutions were included in the survey: the *Unité de Formation et de Recherche des Sciences Medicales d'Abidjan* (UFR-SM), and the *Institut National de Formation des Agents de Santé* (INFAS). All the training institutions surveyed are located in Lagune 2, or more specifically, Abidjan. The INFAS has satellite campuses in Bouake and Korhogo. For medical training, there is a second UFR-SM in Bouaké.

3.4.1 MEDICAL AND PHARMACIST TRAINING INSTITUTION

3.4.1.1 STUDENTS

The number of students enrolled in programs at UFR has fluctuated over the past three years. In 2004, there were 200 new general medicine students enrolled. This number rose to 350 in 2005 and then fell to 230 in 2006. Other programs whose numbers declined between 2005 and 2006 were Surgery (from nine in 2005 to three in 2006), Cardiology (from three in 2005 to none in 2006), Immunology (four in 2005 to none in 2006), Dermatology (from six in 2005 to five in 2006), Public Health (from 20 in 2005 to seven in 2006, one of the most significant decreases), and finally Radiology (from four in 2005 to none in 2006). Pediatrics and Obstetrics/Gynecology remained stable at 19 and 90 respectively. Gastroenterology was the only specialization to see an increase in enrollment (from two to four).

Since 2004, the number of general medicine graduates has declined: 280 graduated in 2004, 244 in 2005, and 203 and were expected to graduate in 2006.

Among the students in the various UFR programs, all reportedly would prefer to work in the public sector. Graduates are hired by both public and private for-profit enterprises.

3.4.1.2 CURRICULUM

Table 11 shows all the programs that are offered by this training institution and which ones include HIV/AIDS in their curriculums.

TABLE 11: PROGRAMS OFFERED AT THE UFR OF MEDICAL SCIENCES

	Program	Offered at this Institution	Curriculum Includes HIV/AIDS
1	Internal Medicine (General Medicine)	Yes	Yes
	Specializations		
2	Surgery	Yes	Yes
3	Pediatrics	Yes	Yes
4	Gastroenterology	Yes	Yes
5	Obstetrics and Gynecology	Yes	Yes
6	Cardiology	Yes	Yes
7	Immunology	Yes	Yes
8	Ear, Nose and Throat Medicine	Yes	Yes
9	Dermatology	Yes	Yes
10	Opthamology	Yes	Yes
11	Stomatology	Yes	Yes
12	Public Health	Yes	Yes
13	Radiology	Yes	Yes
14	Other: Infectious and Tropical Diseases	Yes	Yes
15	Pneumophysiology	Yes	Yes

It is encouraging to note that most program curriculums were revised in 2006 to include HIV/AIDS. The HIV/AIDS curriculum includes the following subjects: ART, PMTCT, and TB as an opportunistic infection (OI). It should be noted that all programs include HIV/AIDS training in their curriculums.

3.4.1.3 FACULTY AND INSTRUCTORS

According to available data on instructors, UFR had a total of 381 instructors in 2006. (See Annex F.) Of this total, 148 were assistant medical directors, 85 assistant professors, 83 lecturer professors and 65 full professors. The ratios of faculty to students varied by program, for example, Radiology 1:15, Cardiology 1:20, Immunology 1:97, and Gastroenterology 1:87. Fifty-eight percent of the programs have faculty to student ratios greater than 1:30. Attrition rates appear to be low, with only 1–4 instructors leaving each year. Death, retirement, and resignation were the reasons cited for leaving.

3.4.2 LAB TECHNICIAN TRAINING INSTITUTION

3.4.2.1 STUDENTS

The number of students enrolled in the three levels of laboratory technician programs has increased from 117 (2004) to 160 (2005) and 218 (2006). Though the total number of students enrolled increased between 2004 and 2005, the number of graduates decreased. Thirty-six students graduated in 2004 and

only 17 graduated in 2005. Sixty-four graduates were projected in 2006. According to survey data, graduates prefer to work in the public sector and are reportedly hired into it.

3.4.2.2 CURRICULUM

The INFAS trains only laboratory technicians for medical analysis. The training program of those technicians covers HIV/AIDS in its curriculum, more specifically VCT and ART. The curriculum has been reviewed to include and update HIV/AIDS training every year since 2002.

3.4.2.3 INSTRUCTORS

While there was steady growth (86 percent) in the number of students enrolling in this type of program between 2004 and 2006, the increase in the number of instructors hired was not commensurate. This inadequacy could negatively influence the quality of the education.

In 2004, there were six full-time instructors (one medical analysis laboratory technician instructor and five technical laboratory engineering instructors). This number rose to seven (one medical analysis laboratory technician instructor and six technical laboratory engineering instructors) instructors in 2005 and remaining unchanged in 2006. With so few instructors, the instructor to student ratio is low: 1:117, 1:160, and 1:218 in 2004, 2005, and 2006 respectively. These data clearly indicate an urgent need to hire additional instructors for a training of quality.

3.4.3 NURSING AND MIDWIFE TRAINING INSTITUTION

3.4.3.1 STUDENTS

The number of students enrolled in nurse and midwife programs increased from 1,545 in 2004 to 1,818 in 2005 and 2,176 in 2006. As the total number of students enrolled increased, so did the number of graduates, from 540 in 2004 to 576 in 2005 and 780 in 2006. According to survey data, the majority of graduates are hired by the public sector.

3.4.3.2 CURRICULUM

Table 12 shows all the programs that are offered by INFAS and which ones include HIV/AIDS in their curriculum.

TABLE 12: PROGRAMS OFFERED AT INFAS

Program	Offered at this Institution	Curriculum Includes HIV/AIDS
Primary Training		
Certified Public Nurses	Yes	Yes
Certified Public Midwives	Yes	Yes
Specializations		
Specialist Nurses and Midwives	Yes	No
Sanitary Technical Engineers	Yes	No

The primary training programs cover HIV/AIDS in their curriculum, specifically, VCT, ART, PMTCT, TB as an OI, FP, treatment of people living with HIV/AIDS, and behavioral change communication. The specializations programs' questionnaire did not indicate HIV/AIDS training being administered as specific courses, but it was included as a topic in the curriculums.

3.4.3.3 INSTRUCTORS

The two major programs offered (primary training and specializations) saw steady growth (71 percent) in the number of students enrolling between 2004 and 2006.

Although the increase in the number of instructors hired was not commensurate with the increase in enrollment, the instructor to student ratio is generally adequate/fair. Since 2004, only five full-time instructors have joined the institution. In 2004, there was a total of 66 instructors; this rose to 71 instructors in 2005 and remained unchanged in 2006. The following teacher to student ratios were calculated for both programs of the institutions. The combined ratios for both Certified Public Nurses and Midwives programs are 1:23, 1:29, and 1:36, respectively for 2004, 2005, and 2006 and 1:10, 1:15, and 1:16, for specialty programs.

3.5 A COMPARATIVE ANALYSIS: PRIVATE VERSUS PUBLIC HEALTH SECTORS

3.5.1 HIV/AIDS FACILITIES AND THE STOCK OF HEALTH CARE WORKERS

Overall, the number of facilities in the private sector (n=1,144) was comparable to that in the public sector (n=1,381) in 2005.

The assessment of the human resources for the public sector (Butera et al. 2005) reported that of the 301 health facilities surveyed, only 5 percent offered ART in 2004. Similarly, the assessment for the private sector estimates that approximately 7.9 percent of facilities offered HIV/AIDS-related services and approximately 4.2 percent of facilities offered ART services in particular.

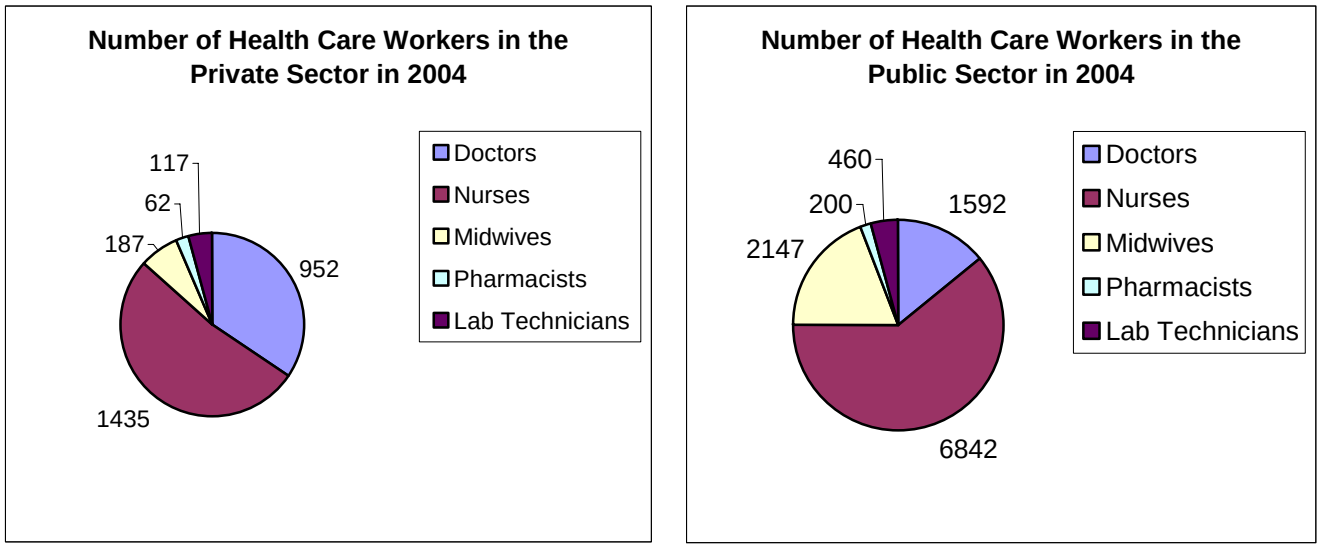
The total number of health care workers available in the private sector appeared to be small, approximately 25 percent that of the public sector. The total number of health care workers in the private sector including doctors, nurses, midwives, pharmacists, lab technicians, and social workers in 2004 was 2,768 FTE, while the figure in the public sector was 11,241 FTE. Nurse and midwives practices constitute 71.6 percent of the total health care facilities in the private sector. The preponderance of the small-scale private facilities lowers the average number of health care workers employed in this sector.

3.5.2 THE COMPOSITION OF HUMAN RESOURCES FOR HEALTH

Although the composition of health care workers in the private sector has changed during the past three years (2004 to 2006) (see Section 3.2), we compare the composition of health care workers in the private sector and public sector using the 2004 data, the year on which the public sector assessment was based. The most striking feature of the private sector is the role that part-time workers play in this sector – part-time workers constituted 23.2 percent of the total private sector FTE in 2004.

The total number of health care workers in the public sector was 11,241, with nurses representing approximately 61 percent of the total and doctors only 14 percent. It is apparent that nurses are the fundamental health care force in Cote d'Ivoire in both public and private sectors. The ratio of doctors to total workers is significantly higher in the private sector (36 percent) than in the public one (14 percent). The nurse to physician ratio was about 1:1 in the private sector, 1:4 in the public sector.

FIGURE 3: COMPARISON OF QUANTITY OF HEALTH CARE WORKERS IN THE PUBLIC AND PRIVATE SECTORS IN 2004



3.6 HIV/AIDS SERVICES PROVIDED BY HEALTH CARE WORKERS

The general trend in public sector provision of HIV/AIDS services is the rapid increase in the number of health care workers delivering HIV/AIDS-related care. From 2002 to 2004, the stock of health workers providing this care more than doubled, to 144 doctors, 121 nurses, 221 midwives, and 53 lab technicians. In contrast, this assessment of the private health sector shows that only 3.6 percent of health care professional FTE were devoted to HIV/AIDS-related services. Also of note, midwives in the private sector contribute around 6 percent of FTE in health care overall, but they devote the largest proportion of their time (25 percent) to performing HIV/AIDS services.

3.7 TREND OF THE STOCK OF HEALTH CARE WORKERS

The comprehensive assessment of the human resources for health in the public sector indicated that the attrition rate is substantially high across all health care professional categories, projecting that the public sector will not maintain the level of stock estimated in 2004 in the coming years; most notably, the shortage of nurses is expected.

In contrast to this trend observed in the public sector, our study findings indicate considerable growth overall in the private sector over the last three years. During the first half of 2006, the total health care FTE is estimated at 3,404. In contrast to the public sector, the private sector has increased its tendency

to hire part-time heath care workers in all categories, particularly physician specialists. The total number of private sector part-time health care workers increased by 23 percent since 2004. During 2004-2005, the part-time worker cadre increased to its highest growth rate of 12.5 percent and then decreased by 9.8 percent in 2005-2006. Although signs of marginal improvements in the total number of doctors hired in the private sector were noted over time, the number of pharmacists and the number of nurses remained stagnant over the last three years (2004, 2005, 2006).

Data from the public sector for 2001 and 2004 indicate that only 40 percent of graduates in each category are hired into the public sector in a given year. In addition to the insufficient absorption of new graduates into the public sector, the report identifies "attrition" as the second reason for the human resource shortage. The 2002 public sector data show a significant loss of one-fifth of its medical doctors and one-quarter of all nurses, indicating primarily political reasons for their departure.

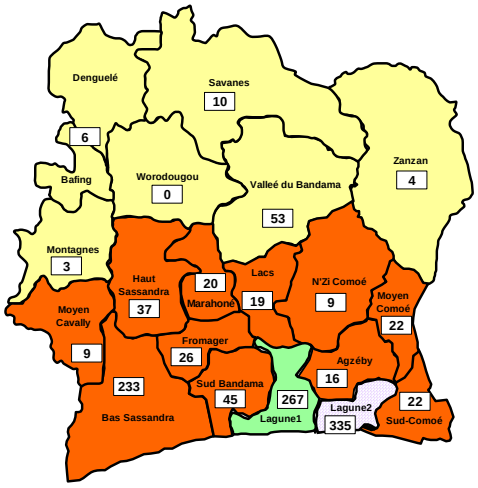
This assessment demonstrates that attrition is not a major concern in the private sector; during 2004 and 2005 health care worker attrition rates in the private sector declined in all categories except pharmacists. Primary reasons for the attrition that did occur included resignation, lay-offs, retirement, death, emigration, or other "personal" issues. Results from the key informant survey confirmed that the majority of employees (33 percent) stayed in the private sector more than 11 years, and the majority of employees (39 percent) who joined the private sector were new graduates.

3.8 GEOGRAPHIC DISTRIBUTION OF HEALTH FACILITIES

The assessment of the human resources in the public sector demonstrated that the distribution of health care workers was skewed toward the health regions of Lagunes 1 and 2, particularly Abidjan, the economic capital and largest city in Cote d'Ivoire. Similarly, the private sector assessment revealed that medical facilities and health care workers are generally concentrated in urban areas such as Lagune 1, Lagune 2, and Bass Sassandra (i.e., of the total 813 ancillary medical centers dispersed across Cote d'Ivoire, 25 percent in Lagune 1, 23 percent in Bass Sassandra, and 22 percent in Lagune 2). More importantly, the facilities that provide HIV/AIDS services are located primarily in the Lagunes. The northern parts of the country offer only very limited services across all types of facilities, indicating a shortage or complete lack of health care services in these areas.

Figure 4 provides an illustration of the number and distribution of health facilities by the four study regions (see shaded areas) and administrative regions.

FIGURE 4: DISTRIBUTION OF PRIVATE SECTOR FACILITIES BY REGION



4. CONCLUSIONS

Five conclusions can be drawn from this study. First, only a small proportion of health facilities (7.8 percent) are providing HIV/AIDS-related services. Polyclinics provide most of these services (54.6 percent) followed by clinics (27.8 percent), and enterprise and village clinics (25 percent). In terms of providers, nurse and midwife practices, which represent the largest number of private health facilities in Cote d'Ivoire, provide only a small portion of HIV/AIDS-related services.

Second, the total number of health care workers available in the private sector is small. The size of the private health sector workforce is approximately 25 percent that of the public sector. About one-third of the private sector care is provided by part-time health workers. Our data show a significant tendency of the private health sector to hire part-time health care workers across all cadres and especially among physician specialists. For example, in 2006, part-time physician specialists outnumbered full-time physician specialists.

Third, most of the private facilities providing HIV/AIDS-related services are located in the urban regions of the Lagunes. This phenomenon is consistent with the public health sector distribution of HIV/AIDS services. Regions 3 and 4, which comprise most of the country geographically, have fewer private facilities providing HIV/AIDS and other health services. HIV/AIDS service provision in the private health sector is low compared to other, competing health services, such as malaria, maternal and child health, and FP services, especially in nurse and midwife practices.

It should be noted that many private sector facilities do not have access to ART or access to the training necessary to prescribe antiretroviral drugs and monitor patients undergoing ART. Counseling and testing for HIV also requires specialized training and is not a profitable service to offer in the private sector, so one should not be surprised at the low level of HIV services offered by private sector providers. Of course, TB and diarrhea are common opportunistic conditions among people living with AIDS, but it is difficult to say what share of these conditions are being treated in the private sector.

Fourth, data from qualitative interviews indicated that incentives such as employer contributions to transportation, housing etc. are not very a major factor in why individuals decide to work in the private sector. Rather, respondents identified salary and schedule flexibility as the most important incentives. Another interesting finding was that majority of those in the private sector would prefer to work in the public sector.

Finally, there has been a steady growth in the number of students enrolling in the health training institutions since 2004. However, the increase in the number of instructors hired was not commensurate with it, thereby leading to questions about the quality of education, which may have been compromised.

5. RECOMMENDATIONS

In order to strengthen the private sector, the authors make the following recommendations:

1. The government should closely examine innovative ways to actively involve private nurse and midwife practices in the provision of HIV/AIDS services. Based on the large number of nurse and midwife practices, serious consideration should be given to policies and programs to scale up HIV/AIDS services these practices. Those could include adding HIV/AIDS care to the curriculum of nursing and midwifery schools; and providing in-service training and participation to seminars or workshops on HIV/AIDS services. One strategy for increasing the level of training among private providers may be to require HIV training as a condition for re-licensure. Private providers who have attained sufficient quality standards could also be given access to subsidized antiretroviral drugs or drugs for treating OIs.

2. The government should develop strategies to encourage the establishment of private health practices in regions 3 and 4. An assessment of the barriers to provision of practices in these regions is also necessary to determine the most effective strategies. Those strategies could include government contracting out provision to private providers, increasing provider access to training, providing subsidized medicines, providing access to credit to start up or expand private practice, or providing tax exemptions.

3. More research is needed to determine which private providers are most sought by consumers seeking HIV/AIDS services. Special efforts should then focus on these providers. An assessment of the skill level and the quality of care of these providers may also be needed to determine how much additional training is needed or whether their scopes of practice can be expanded to include provision of HIV services.

4. Traditional providers were not included in the scope of this study, but experience from other countries in sub-Saharan Africa show that these providers are highly sought after, especially in rural areas. While it may not be appropriate to use traditional providers for HIV service delivery, some outreach to them may be needed to increase referrals to appropriate public or private facilities.

ANNEX A: CLASSIFICATION OF PRIVATE SECTOR HEALTH FACILITIES

Septembre 5, 2006

Interview with Dr. Atte Boka, Direction des establishments et professions sanitaires (DEPS)
By Won Chan Lee

Classification définition et organisation des establishments sanitaires privés

Selon le décret 877 du 25 Octobre 1996, les établissements sanitaires privés sont classes comme suit:

1. Les établissements médicaux

1) Policliniques

C'est un établissement assurant les activités de consulta Tion et hospitalisation dans plusieurs spécialités. Leur équipement et capacité des lit est de 60 et plus.

2) Cliniques

C'est un établissement assurant des activités de consultation et hospitalisation de trios spécialités. Elle a une capacité d'accueil de 15 lit a 60 lits.

3) Centres médicaux

Consultations, soin ambulatoire et diagnostique. On y fait des mises en observation. Pas d'hospitalisation.

4) Cabinets médicaux

Consultation et diagnostiques d'une seule spécialité. Ni hospitalisation ni mise en observation.

Pour l'enquête, les centre médicaux et les cabinets médicaux sont regroupes a un centres médicaux. Tous ces establishments médicaux sont tenu par des médecins.

2. Les établissement paramédicaux

1) Centres des soins infirmaries: établissement sanitaire tenu par un infirmier qui assure des soin curative et des prevention. On y fait mis en observation cabinet de soin pre et post natal tenu par sage femmes qui assure des soins curative et des prévention aux femmes enceintes ou qui viennent d'accoucher. On y fais des mises en observation.

2) Cases de santé: Assurant des soins curatifs, des préventions et d'éducation elle est tenue par des agents des santé communautaire.

Dans le cadre de cette enquête, tous ces centres sont regroupe a un centre de soin infirmier et obstétricaux. Tous les cabinets paramédicaux sont supervisés par des médecins mais aucun médecin n'est autorisé a y travailler.

3. Les établissements sociaux sanitaire

1) Centres médicaux sociaux: Assurant consultation, diagnostiques et soins curative et d'éducation pour la santé. Il est tenu par un médecin assisté par un infirmier et un assistant social.

2) Centre de conseil et de soin ambulatoire

Assurant des activités de dépistage. Prévention, les traitements et de conseil. Il est dirige par un médicin or infirmier. Il assure des soins a domicile. Dans le cadre de l'enquête, ces deux type sont regroupe a un centre médicaux sociaux.

Au total, dans le cadre de l'enquête, nous avons classé des établissement sanitaire comme suit :

Etablissement médicaux

- Polyclinique (1)
- Clinique (2)
- Centre médicaux (3)

Etablissements paramédicaux (4)

- Centre de soins infirmier et obstétricaux (4)

Centres sociaux sanitaires (5)

- Centre médicaux sociaux (5)

Les centres de santé des entreprises

- Toutes les entreprises doivent créer selon la loi réglementant la médicine d'entreprise, une infirmerie ou un centre médical d'entreprise. Mais il arrive que des entreprises créent des cliniques et des centres médicaux et sociaux
- Les centres médicaux d'entreprise sont destiné a la prise en charge uniquement du personnel des dit entreprises.

Les entreprises village cliniques

Leurs activités s'entendent hors de celle personnel de l'entreprise. Elle prend une charge toute la population situé dans un site d'entreprise.

ANNEX B: SYSTEMATIC SAMPLING

It was planned that approximately 211 facilities were to be selected to construct the study sample, thus yielding a total number of 250 facilities. With a simple random sample of 250 facilities, population percentages of some characteristics of interest was estimated with a margin of error of plus or minus 6.2 percentage points at a 95 percent confidence level; however, certainty selection of large facilities, combined with stratification of facilities, yielded a somewhat higher precision than under simple random sampling.

For the actual selection of facilities, the total sample of 211 facilities was first allocated to the 19 regions in proportion to the number of facilities in the region. Based on the number of facilities allocated to the region, a sampling interval was computed (which was not rounded). Within each region, a systematic sample of facilities was selected using the sampling interval computed for the region after sorting the population of facilities by type, ensuring proportional representation for each type of facility within the region. An independent fractional sampling interval was obtained by dividing the remaining health facilities of the population by the number of regions as illustrated in the box below. This was to ensure that the selected sample size equaled the desired sample size.

Each facility within a region had the same chance of being included in the sample. Of note, the probability of selection of a facility by region is also approximately equal in light of the proportional allocation. This strategy reduces the variance and results in a smaller sample size with the same precision.

In addition to the 250 total facilities targeted for the study, data from 29 additional facilities were collected, 16 of which were identified as not included in the MOH's 2005 census of the private health sector. Therefore, the total number of facilities included in this study was 279.

BOX 1: SYSTEMATIC SAMPLING METHOD

If, K = the sampling interval and

R = a random number between 1 and K,

then the Rth facility on the list of facilities in the region was selected first and then every Kth facility is selected thereafter until the required number of facilities for the sample has been chosen.

SAMPLING WEIGHTS

For producing population-based estimates of totals, means, ratios, and percentages, each responding facility was assigned a sampling weight. This weight combines a base weight, which is the inverse of the probability of selection of the facility, with an adjustment for nonresponse. In view of the identical probability of selection within each type, the base sampling weight represented simply the ratio of the number of facilities in the population divided by the number selected in the sample. Table B-1 illustrates the selected cities for each allocated region.

TABLE B-1: CITIES WITHIN EACH REGION

Regions	Cities
Region 1	Lagune 2
Region 2	Lagune 1
Region 3	Sud Comoe, Moyen Comoe, N'Zi Comoe, Agneby, Marahoue, Lacs
Region 4	Montagnes, Denguele-Baffing, Worodougou, Valle Bandama, Savanes, Zanzan

The nonresponse rates were different for different regions. For nonresponse adjustment, facilities were grouped into four regions by type. The nonresponse adjustment factor was computed as the ratio of the eligible total sample (nonrespondents and respondents) to the respondents. The base weight multiplied by the nonresponse adjustment factor gives the final sampling weight. Table B-2 shows the weights for the four regions and six types of facilities. The sampling weights for facilities selected with certainty were set to 1.0 are not shown in this table.

TABLE B-2: SAMPLING WEIGHT BY STRATA

Region	Polyclinics	Enterprise/ Enterprise Village Clinics	Clinics	Medical Centers and Practices	Nurse & Pre/Post Natal Practices	Social Medical Centers
Region 1	1.0	1.0	3.70	3.26	5.86	0.67
Region 2	1.0	1.0	4.67	10.17	9.26	0.50
Region 3	1.0	1.0	2.75	2.80	5.05	5.60
Region 4	1.0	1.0	1.00	1.00	2.90	0.29

These weights are used for computing the various estimates and also for statistical analyses.

For example, assume that we are interested in estimating the population proportion of some characteristic of interest such as the proportion of facilities offering a specific service to patients. Let j denote the type of facility and h denote the collapsed region created for computing sampling weights. Let w_{hj} be the weight attached to each facility of type j in region h. For example, from Table B-2 we see that all the clinics in Region 1 get a weight of 3.7.

The overall proportion of facilities offering a specific type of service is given by

$$p = \frac{\sum_{h=1}^{5}\sum_{j=1}^{6}\sum_{i=1}^{n_{hj}} w_{hj} y_{hji}}{\sum_{h=1}^{5}\sum_{j=1}^{6} w_{hj} n_{hj}}$$

where

y_{hji} =1 if the i th facility of type j in stratum h offers the service

$y_{hji} = 0$ if it does not offer the service.

n_{hj} is the number of facilities of type j in stratum h. Similarly, the estimates of totals, means, and ratios are calculated.

DATA QUALITY CHECK

Data collected were verified and cleaned before being entered in the Access database. Cleaning data typically included correcting mistakes such as wrong codes, a blank question, misinterpretation of a code (e.g. 0=No, 1=yes), and an answer entered in the wrong space.

A 5 percent quality check on the data entries was also conducted which yielded a maximum error of 0.4 percent, substantially lower than 5 percent. This calculation was based on 14 surveys randomly chosen from the total of 273 surveys collected. This maximum rate was derived from the survey that gives rise to the highest level of entry errors, i.e., 10 wrong entries out of 2,666 variables. The minimum error rate was 0 percent. Therefore, the error rate ranges from 0 percent to 0.4 percent.

ANNEX C: STEERING COMMITTEE

Comite de Pilotage de l'Enquete pour l'Evaluation des Ressources Humaines dans le Secteur Privé de la Santé en Cote d'Ivoire

No	Nom et Prenom	Structure	Fonction	Contact
1	Pr. OULAI Soumahoro	Direction de la Formation et de la Recherche (DFR)	Directeur	07 81 35 10 oulsoum@yahoo.fr
2	Dr. KRAFFA Blaie	Direction de la Formation et de la Recherche (DFR)	Sous-directeur	07 89 76 47 krafblaise@yahoo.fr
3	Dr. KRAMO Y. Séverin	Direction de la Formation et de la Recherche (DFR)	Sous-directeur	07 94 07 45 kramoseverin@yahoo.fr
4	Mlle KOUAME Hortance	Direction des Ressources Humaines (DRH)	Sous-directeur	07 80 63 68 hortaffo@yahoo.fr
5	Dr. TUHO Zanga Moïse	Direction de l'information, de la Planification et de l'evaluation (DIPE)	Sous-directeur	05 94 72 20 tuhofr@yahoo.fr
6	Dr. ATTE Boka	Direction des Etablissements et Professions Sanitaires (DEPS)	Sous-directeur	05 77 56 94 attedjeboka@yahoo.fr

ANNEX D: LIST OF SUPERVISORS/ DATA COLLECTORS

No Equipe	Superviseur	Enqueteurs	Regions
I	Dr. THUO Zanga Moïse Dr. Yao Yao Alexis	1. Affian Valerie 2. Odjekale Minjibu Oyeyemi 3. N'Guette Anet 4. Kobenan Kra	Lagune 2
II	Dr. KRAFFA Blaise	1. Yobouet Jean Puerre 2. Appia Mathias	Sud Comoe – Moyen Comoe – N'Zi Comoe – Zanzan – Agneby
III	Dr. ATTE Boka	1. Gnaore Patrick 2. Odje Koffi	Bas Sassandra – Moyen Cavally
IV	Kra Armel	1. Koffi Auguste 2. N'Dri Kouakou	Haut Sassandra – Marahoue – Lacs – Fromager
V	Kramoh	1. Adje Niamkey 2. Kouadio	Lagune 1 – Sud Bandama
VI	Ano Daniel	1. Fallea Guy 2. Amessan Ezuehu Jean Baptiste	Montagnes – Bafing – Dengeule – Worodougou
VI	Kone Siaka	1. Meite Lassana 2. Kone Tenon	Vallee du Bandama – Savanes

ANNEX E: LETTER OF INTRODUCTION

MINISTERE DE LA SANTE
ET DE L'HYGIENE PUBLIQUE

REPUBLIQUE DE COTE D'IVOIRE
Union-Discipline-Travail

N° 4090 1MSHPICAB-IlDFR1kac

Abidjan, le *3 0 AOUT 2006*

I-))

Messieurs les Directeurs Regionaux

Dans le cadre de la collaboration entre le Ministere de la Sante et de I' Hygiene Publique of le Plan d'Urgence du President des Etats--Unis contre le SIDA (PEPFAR), une enquete se deroulera du 04 au 16 septembre 2006 dans votre region. Elie fait suite a celle deja menee dons le secteur public du 04 au 23 mai 2005.

L'objectif de cette enquete est de proceder a ('evaluation des ressources humaines disponibles et requises dans le secteur prive en vue d'ameliorer la prestation des services dans le domaine de la prise en charge des patients du VIH/SIDA et de fournir des services de sante de base en Cote d' Ivoire.

Je vous demande de bien vouloir faciliter le deroulement de ('enquete dans les etablissements sanitaires prives choisis dans votre region.

Pour le Ministre et par delegation Le Directeur de Cabinet

Dr. Marcel KOFFI-KOUMI

ANNEX F: FACULTY AND INSTRUCTORS AT UFR IN 2006

Question 1 : nombre d'enseignants travaillant dans l'institution : 381

Specialites	Section	Pt	Mca	Ma	Acc	Total
Médecins internes	Médecins généralistes	03	02	03	03	11
Chirurgiens	Tramatologues	02	05	06	06	19
	Plasticiens	00	01	01	05	07
	Géréralistes et viscéraux	04	04	06	07	21
	Pédiatres	04	03	03	02	12
	Urologues	03	01	02	03	09
	Neurochirurgiens	01	01	01	01	04
	Thoraciques /cardiaque	00	03	00	04	07
Pédiatres		04	02	06	08	20
Gynéco-obstétriciens		03	03	11	08	24
Gastroentérologues		01	03	04	01	09
Cardiologues		01	02	04	05	12
Immunologistes		01	02	01	01	05
Hématologistes		03	01	02	04	10
Cancérologues		01	01	00	03	05
Dermatovénérologues		01	03	02	04	10
Ophtalmologues		01	01	02	08	12
Otorhinolaryngo		02	04	04	04	14
Stomatologues		02	03	01	03	09
Radiologues		03	05	03	07	18
Infectiologues		03	03	01	04	11
Santé publique		02	02	04	06	14
Rhumatologue		01	01	00	02	04
Néphrologues		01	01	01	03	06
Neurologues		02	02	00	04	08
Psychiatres		02	01	00	03	06
Anatomopathologiste		02	01	02	03	08

Specialites	Section	Pt	Mca	Ma	Acc	Total
Anatomistes		03	02	00	04	09
Biochimistes		01	02	03	01	07
Bactériologistes		01	03	01	02	06
Parasitologistes		00	02	00	01	03
Réanimateurs		02	01	05	11	19
Physiologistes		02	01	00	03	06
Histologiste		00	01	00	02	03
Pharmacologues		00	02	02	03	07
Médecins du travail		01	01	02	01	05
Rééducateurs		00	01	00	02	03
Médecins légistes		00	01	00	01	02
Biophysiciens		00	01	01	02	04
Pneumologues		02	04	01	03	10
TOTAL		65	83	85	148	381

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