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FEDERAL MINISTRY OF HEALTH  
KHARTOUM SUDAN

**ROLE OF THE PRIVATE SECTOR  
IN HEALTH CARE DELIVERY  
IN KHARTOUM AND GEZIRA STATES  
SUDAN**

**FINAL REPORT**

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## LIST OF ACRONYMS

AD	Assisted Delivery
BNS	Blue Nile State
CBR	Crude Birth Rate
CDR	Crude Death Rate
CSS	Client Satisfaction Score
EAMC	Egyptian Army Medical Corps
ECG	Electrocardiogram
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
GNP	Gross National Product
GOS	Government of Sudan
HV	Health Visitor
IMR	Infant Mortality Rate
KHS	Khartoum State
KS	Kassala State
MA	Medical Assistant
MOH	Medical Officer of Health
MoH	Ministry of Health
NATC	Natural and Traditional Therapies
NMW	Nurse Midwife
NS	Northern State
PMO	Principal Medical Officer
PMOH	Province Medical Officer of Health
QOC	Quality Of Care
QOCS	Quality Of Care Score
RAMC	Royal Army Medical Corps
SDF	Sudan Defence Force
SHCS	Sudan Health Care System
SMS	Sudan Medical Service
SNCHS	Sudan National Comprehensive Health Strategy
SPLM	Sudan People's Liberation Army
SQCS	Sudan Quarter Century Strategy
TTBA	Trained Traditional Birth Attendant
U5MR	Under Five Mortality Rate
US	Ultra Sound
VMW	Village Midwife
WHO	World Health Organization
WTRL	Wellcome Tropical Research Laboratory
WWI	World War I

## EXECUTIVE SUMMARY

### **Objectives:**

The objectives of this study were to: determine the size of the private sector by its different types, determine the types of private sector institutions, define the types and quality of care delivered by the private sector, identify the anticipated role of the private sector in health care delivery and the contribution of the government in encouraging the sector and how can we integrate the services of the two sectors, study the factors causing users of Health Care to opt for the Private Sector reviewing and unraveling reasons for such option from the perspective the users, thus, comparing utilization in domains of promotive, preventive and curative care, in both public and private sectors and assessing access (geographical and financial), quality, effectiveness and efficiency of such domains, and determine the contribution of the private sector to health care delivery, define the types of private sector health institutions, determine the type of care delivered by the private sector, identifying the anticipated role of the private sector in health care delivery and the contribution of the government in encouraging the sector and how can we integrate the services of the two sectors, and determine the advantages, if any, of the private sector over the public sector.

### **Methodology:**

The study design was a descriptive cross-sectional study reflecting the picture at the time of the survey. The survey was limited to Khartoum State and Gezira State, which encompass most of the private sector institutions in Sudan. The study population included a 25 percent random sample of private hospitals, private health centers, and full-time private clinics/laboratories. A random sample was selected for each type of facility. The selected units were visited by the research team. An interviewer-administered questionnaires was conducted to collect basic data from the manager/administrator of the facility. A check list investigated the quality of private sector facility and a client satisfaction score was directed to users of the facility. Study variables included: number of patients seen, number of admissions, number of operations performed, number of laboratory samples investigated, number of X-ray and US exposures done, and number of ECGs done. Data were entered onto an excel database and analyzed by counts, proportions, percentiles and means according to type of private sector facility.

### **Results:**

#### **Khartoum State:**

The private sector derive was predominantly for profit with only a few (23.3%) health centers being charity centers and an overall non-profit status of only 4.3 percent.

Applications for investment concessions were high, but about half of those who applied were not satisfied either with the law or with the bureaucracy.

Compared to the public sector, the private sector share in these facilities amounted to the provision of between 14.3 percent of endoscopies to 58.3 percent of hospitals in Khartoum State. The contribution of the private sector in health facilities of Khartoum State during 2005 was an average of 24.3 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics.

Compared to the public sector, the private sector share in these categories of health manpower amounted to engaging of between 24.6 percent of specialists to 10.1 percent of the MOs in Khartoum State during 2005. In assistance of theses personnel and in comparison with the public sector, the private sector engaged other categories of health manpower in Khartoum State during 2005 that ranged between 5.7 percent of MWs to 61.3 percent of pharmacists. The contribution of the private sector in health personnel of Khartoum State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel.

Compared to the public sector, the private sector share in this health care load undertaken amounted to between 6.7 percent of operations to 46.7 percent of ECG exposures. The contribution of the

private sector in delivering all units of health care load in Khartoum State during 2005 was an average of 23.4 percent. The mean QOC score was 86.7 percent, and the mean CSS was 86.7 percent.

#### **Gezira State:**

The private sector derive was predominantly for profit with only a few (23.3%) health centers are charity centers and an overall non-profit status being only 4.3 percent.

Although applications for investment concessions were low, about one third of those who applied were not satisfied with the bureaucracy.

Compared to the public sector, the private sector share in these facilities amounted to the provision of between 6.2 percent of hospital beds to 40.1 percent of laboratories in Gezira State. The contribution of the private sector in health facilities of Gezira State during 2005 was an average of 14.1 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics.

Compared to the public sector, the private sector share in these categories of health manpower amounted to engaging between 47.5 percent of specialists to 29.8 percent of the MOs in Gezira State during 2005. In assistance of these personnel and in comparison with the public sector, the private sector engaged other categories of health manpower in Gezira State during 2005 that ranged between 1.7 percent of nurses to 67 percent of pharmacists.

The contribution of the private sector in health personnel of Gezira State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel. Compared to the public sector, the private sector share in this health care load undertaken amounted to between 2.4 percent of ECG exposures to 7.3 percent of US exposures. The contribution of the private sector in delivering all units of health care load in Gezira State during 2005 was an average of 3.5 percent. The QOC score was 65.5%, and the CSS was 75.0%.

#### **Conclusions:**

It was concluded that:

The private sector is playing an important role in health care delivery in Khartoum State, but to a lesser extent in Gezira State.

However, this role needs to be better supervised and directed for a complementary role between the public and private health sectors.

The part contributed by specialists from the public sector working part time with the private sector is overwhelmingly.

Tables 6.1.1 and 6.2.1 summarize all health care delivery indicators: distribution of health facilities, health manpower and health care load by sector for Khartoum state and Gezira State, respectively.

#### **Recommendations:**

Call for:

Before any private sector hospital, or other health facility, is licensed the design must fit with standard health facility architecture.

Standard health facility designs must be made available for private sector investors.

There is need to institutionalize the role played part time by public sector health personnel in health care delivery of private sector health institutions.

There need for some form of partnership between the public and the private sectors in health care delivery with sharing of responsibilities which needs to be discussed by the stakeholders.

# 1. INTRODUCTION

## 1.1 Background to Sudan Health Care System (SHCS):

Sudan is the largest country in Africa. It is geographically, culturally and ethnically a microcosm of Africa and by virtue of these traits it occupies a unique position in the epidemiology of health and disease in the continent. It is nearly one quarter of the size of Europe, with an area of approximately 2.5 million square kilometers, extending from latitude 4 to 22 degrees north (from the desert of the sub-Sahara to the tropics of the Equator) and from Longitude 22 to 38 degrees east. It is 2,100 kilometres long and 1,600 kilometres wide at its extreme. Along its international boundaries of more than 7,000 kilometres in length it is bordered by nine countries: Egypt, Libya, Chad, Central African Republic, Democratic Republic of Congo, Uganda, Kenya, Ethiopia and Eritrea. This vast land is longitudinally crossed by the gigantic River Nile and its tributaries, the White Nile and the Blue Nile with a peninsula of fertile land between them forming the Gezira, the country's backbone of irrigated agricultural land-escape. The country is in form an immense plain divided into four distinct geographical zones:

- The arid drought-prone, sub-Saharan Sahel in the northern part of the country
- The western area of undulating lands which separates the desert from the flood plains.
- The flood plains, with the vast swamps of the "Sudd".
- The tropical rain forests of the extreme south.

Along with the diverse environment of this vast country, great cultural diversity is also found among more than 600 tribes, of Arab and Nubian origin in the North and of Nilotic and Nilo-Hamitic origin in the South. Bordered by nine countries, it has tribal mixes across frontiers sharing similar customs and traditional values. Many ethnic groups stay across the international boundaries Sudan and its nine neighbours. In addition, its central geographical position has exposed it to successive waves of refugee influxes from neighbouring countries nearly always fleeing from areas torn by strife or from repressive regimes. Equally, drought, famine, or civil war have caused large numbers of its population to be displaced over the common borders with its neighbours.

Prior to 1956, Sudan was under the Anglo-Egyptian Condominium founded in 1898 with the downfall of the national Mahdist State. The independent Republic of the Sudan was officially born, before most African nations attained self-rule, on New Year's Day 1956 by a resolution of Parliament after a two-year transitional period of self-government ending the Condominium in line with the February 1953 Agreement between Britain and Egypt. Since independence democratically elected governments and military regimes have alternated in the political life of the country, though the latter have dominated the scene. The present political and administrative structure of the country, and since 1994, is based on a presidential republic and a federal system of 26 states, 10 of which constitute southern Sudan. Each state is administered by a *Wali* (Governor) assisted by a cabinet of some 5-7 ministries. At the next level of administration, a state is divided into provinces (Localities since 2003<sup>1</sup>), each administered by a Commissioner. At village or neighbourhood level, Popular committees are directly elected by eligible people.

On 9<sup>th</sup> January 2005, a peace agreement was signed by the Government of Sudan (GOS) and the Sudan People's Liberation Movement (SPLM) which ended over 20 years of military conflict and granted the 10 states of Southern Sudan autonomous rule. In due course, this agreement is destined to have far reaching repercussions on the political and civil service system of the country.

The total population of the Sudan in 2004 was estimated as 35 million (based on 31.5 million in 1993 census<sup>2</sup>), 17 percent of whom live in southern Sudan. Less than 3 percent of the population

are nomadic, and about 29 percent live in urban areas, while the majority (about 68 percent) live in scattered rural localities. A sizable portion is concentrated along the Nile and its tributaries. The average population density is about 10.2 persons per square kilometer (ranging between 5 in the Northern State to over 200 in Khartoum and Gezira States). The annual population growth rate is 3.2 percent. Rural urban migration has been steady and high during the last 20 years (4 percent) due to natural disasters, civil conflict and poor development in rural areas.

The population pyramid of the Sudan illustrates a high percentage of young people, due to a high birth rate and high mortality rates. The sex ratio (for 1,000 females) is 970<sup>3</sup>. While 45 percent of the population are children under 15 years (15 percent under 5) and 49.6 percent fall in age group 15-64, only 5.4 percent belong to age group 60 and above. The dependency ratio is 862<sup>1\*</sup>. The child-woman ratio is 910<sup>2\*\*</sup>. Female-headed households account for 11.7 percent and the average number of household members is 6.4. The crude birth rate (CBR) is 31.2 and the crude death rate (CDR) 16 per 1,000 population. The infant mortality rate (IMR) is 110 and the under-five mortality rate (U5 MR) 146 per 1,000 live births.

Table 1.I shows demographic and administrative data of the 16 northern states. Over 25 million people live in the North. The most populous states after Khartoum State (KHS) are Gezira State (GS) and South Darfur State (SDS). The population weights of the 16 northern states vary between 2.3 percent in the Northern State (NS) to 18.6 percent in KHS. Khartoum and Gezira states, the subject of this proposal, constitute about one third (31.8%) of the population of Northern Sudan.

**Table 1.1: Demographic and administrative data of Northern Sudan**

No	State	Population	Population %
1.	Northern	582,000	2.3
2.	River Nile	900,000	3.5
3.	Red Sea	721,000	2.8
4.	Kassala	1,525,000	6.0
5.	Gedaref	1,409,000	5.5
<b>6.</b>	<b>Gezira</b>	<b>3,374,000</b>	<b>13.2</b>
7.	Sennar	1,173,000	4.6
8.	White Nile	1,476,000	5.8
9.	Blue Nile	636,000	2.5
<b>10.</b>	<b>Khartoum</b>	<b>4,740,000</b>	<b>18.6</b>
11.	North Kordofan	1,483,000	5.8
12.	South Kordofan	1,111,000	4.3
13.	West Kordofan	1,124,000	4.4
14.	North Darfur	1,455,000	5.7
15.	South Darfur	2,260,000	8.8
16.	West Darfur	1,577,000	6.2
	<b>Northern states</b>	<b>25,546,000</b>	<b>100.0</b>

\* Population aged less than 15 years and 65 or more for 1,000 persons aged 15-64.

\*\* Children aged less than 10 years for 1,000 women aged 15-54 years.

Sudan economy is basically agricultural (rain, flood and irrigated) and pastoral. The country is still considered poor with a per capita income of USD 330 in 1999. For successive governments the major challenges were: to revive the stagnating per capita gross national product (GNP), to revitalize the decaying economy, to raise the foreign currency reserves and to provide jobs for an exploding population. Agriculture and livestock are still the main sources of Sudanese economy, employing about 80 percent of the country's labour force and contributing over 70 percent of the gross domestic product (GDP). Lucrative oil fields in south and central Sudan are being tapped with the help of foreign investors. The share of industrial production, still mainly light industry, to the GDP is only about 10 percent. Serious plans to assess and tap the country's mineral wealth are still limited. The potential for hydro-electric power is great, but its exploitation and hence the consumption of electricity is low. The still inadequate network of transport (railway, road, river, sea and air) is impeding economic growth. Two comprehensive economic plans were designed since 1992: The Sudan National Comprehensive Strategy (SNCS) 1992-2002<sup>5</sup>, followed by another Sudan Quarter-Century Strategy (SQCS) 2000-2025<sup>6</sup>. Systematic planning and careful monitoring and supervision, however, are necessary concomitants of successful implementation of realistic targets.

In association with most of the other issues that came to the fore in the wake of independence, education has been both cause and effect of the tremendous force for development that today virtually affects every level of the community—a force which is simultaneously social, political and, above all, economic. Persistent efforts were made by both government and community participation to expand the system of general education at all levels, especially female education. In 1956, boys outnumbered girls four times at the elementary level, more than six times at the intermediate level and seventeen times at the secondary level<sup>7</sup>. In recent years boys and girls are about equally represented in educational opportunities<sup>8</sup>. The literacy rate (age 15 years and over) in north Sudan is 49.9 percent (50.6% for males and 49.2 percent for females) and primary school attendance (age 6-13 years) is 48.3 percent (49.7% for males and 46.9% for females). During the last 15 years higher education witnessed great expansion to the extent that the majority of graduates from some 26 universities remain jobless for years after completing their various studies, including medicine and engineering.

## 1.2 Traditional medicine heritage:

Sudan health care system (SHCS) grew and developed against a backcloth of traditional beliefs. Sudan has a unique background of traditional medical heritage that is of considerable historical interest. Spreading as it does over a wide spectrum of Muslim Arab, ancient Egyptian and indigenous African beliefs, Sudanese traditional medicine and natural and traditional therapies (NATC), Sudanese traditional medicine affords a revealing glimpse of the influences to which the inhabitants of the country have been subjected. The Sudanese people early became attuned to a variety of influences—religious ties, trade connections and foreign administrations. These cultural, economic and political factors left their distinctive marks on Sudanese social life, sometimes helping to interweave it with alien cultures. The historical conditions under which this transformation occurred were responsible for placing the country in its unique position of a crossroads of traditional medical practices. Generally speaking, some three interesting facets were: the Muslim-Arab influence, forms of African traditional medicine, and the synthesis of the two and the further impact of Western medicine. The Muslim influence is displayed by the *fagirs* using several religious healing methods, famous among which are the employ of verses from the Koran as *azima* (verbal citing), *mihaya* (wash-off potion of writing to drink), *hijab* (written verses sewn into an envelop of leather and hang worn), and blessing (*baraka*), music therapy (Nuba) and shock therapy



(*jarida thrashing*) of holy men. The traditional African believes first that disease is caused by a spirit of a supernatural agency and, secondly, that illness can be alleviated or cured by searching for something in nature to counteract whatever has gone wrong with the body (homoeopathic approach). Arab traditional medicine was to mix and compete with the indigenous African magic, witchcraft and superstitious beliefs. A compromised style gradually evolved through successive generations. At the beginning of the 19<sup>th</sup> Century, the Sudan, and indeed Africa as a whole, became a focus of interest to foreign political dominance in quest of the sources of the Nile. Social change from subsistence to cash economy, the growth of towns and industry, and the impact of Western medicine were among the factors of integration and synthesis between Sudanese ethnic groups.

One of the first measures introduced by colonial administrations was to institute severe penalties for certain offences in an attempt to abolish the practices of traditional medicine and witchcraft. Superstitions are still common in some rural localities; and it appears that any differences in the conditions existing in various areas can be attributed to the extent to which economic progress, western science and, in part, Christian missionaries have modified the people's beliefs and manner of life. Witchcraft is a cult that is still accepted among some isolated tribes in the Sudan; and it is possible that law has just driven it underground. Witch-doctors, *kijurs* and traditional healers continue to practice their talents in a society of which they were a rational part and where their role had evolved over centuries. The Sudanese people, however, have shown a tendency to adjust themselves to the new concepts of Western science and Sudanese society is constantly moving towards an equilibrium in which conflict ceases between traditional beliefs and modern concepts.

### **1.3 The establishment of modern health care:**

Western medicine was first brought to the Sudan by the Turko-Egyptian regime. Some form of medical service was developed in the country well before its government was fully established. Medical administration inevitably started as a rudimentary service geared to the army machine and made little impression on the health of the indigenous population. It began and developed as an army medical corps. In structure and function, therefore, it evolved as a unit among many, responsible to the commander-in-chief of the occupation army and governor-general of the Sudan. The pioneer doctors and medical personnel who introduced the first elements of Western medicine were commissioned officers in the Turko-Egyptian occupation army. They first practiced their art in the field; but later a few hospitals were built as parts of military barracks in the larger garrison towns of Khartoum, Wad Medani and El Obeid, while some smaller medical units were set up in other strategic locations in the provinces. These initial military medical establishments invariably limited their services to the troops. The elite group of Turko-Egyptian officers and civilians preferred, not without reason, to be treated in their homes. But, medical services for the Sudanese, unless connected with the army, remained fragmentary until the regiments of Mohamed Ali's New Model Army (*nizam al-jadid*) found their way to the Sudan in 1825. Because the Pasha wished to have surgeons and assistant surgeons attached to the various units of his new army, he embarked on a crash programme to train Egyptian doctors locally by establishing the *Abu Za'abal* (later *Qasr al-Ayni*) Medical School under Clot Bey. By the late 1830s the expanding medical school began to deliver a fresh supply of Arab doctors and pharmacists to the garrisons of the Sudan.

These pioneering medical men of the Turko-Egyptian service in the Sudan performed their duties well under unfavourable conditions. They faced a host of tropical diseases with the inadequate knowledge of the medical science of the day, and not infrequently the gaps in their training were bridged by the rich practices of Sudanese traditional medicine. During the last two decades of the Turko-Egyptian Administration, health conditions started to improve. Epidemics were more rare, hospitals were built at all provincial seats and a principal medical officer was put in charge of the health aspects of each province. Before the liberation of Khartoum by the Mahdi in 1885, there was

a large hospital there, several drug stores, and the achievements of Egyptian trained practitioners were widely recognized.

The Turko-Egyptian medical administration played a leading role in introducing the first elements of modern medical care into the heart of Africa. The first practice of both curative and preventive medicine in the Sudan was the exclusive venture of the Turko-Egyptians. They deserve credit for definite achievements: the operation of the first hospitals in the country, the initiation of the first vaccination campaigns, and the promotion of the first sanitary measures. These achievements were of value to future medical administrations; as when the Anglo-Egyptian Condominium was created in 1899, after a decade and a half of national rule, it did not start afresh, but built squarely on Turko-Egyptian foundations.

Western medicine was first brought to the Sudan by the Turko-Egyptians but outside a limited circle the Egyptian medical administration made little impression on the health of the general population. Comprehensive and organized health services in the Sudan properly begin in 1899 with the inauguration of the Anglo-Egyptian Condominium. Since the new administration which followed the Mahdist national rule emerged out of a military conquest orchestrated by Britain, British army officers dominated the country's central and provincial organizational fabric. As was inevitable, the health affairs of the country were initially handled by a military department, the Egyptian Army Medical Corps (EAMC) in the Sudan. The principal medical officer (PMO) of the corps and his senior staff were exclusively British officers seconded from the Royal Army Medical Corps (RAMC). Junior doctors were invariably Syrian medical graduates of the French and American universities in Beirut. Besides looking after the health of the troops and officials, the army doctors provided services to the general population and were concerned with communicable disease control. The development of Sudan health services since then was a sure and calculated transformation into a civil organization, and being one of the oldest in Africa, it developed with strong research and training components<sup>9</sup> to rank it, at one point in history, as the most highly qualified service in the world<sup>10</sup>. From its inception, it followed, in the main, an official pattern with a combination of governmental control and government provision.

Embedded in the development of SHCS, is a long chain of historical landmarks which reveal the managerial logic of different phases of development, not only commensurate with international changes in the field, but sometimes pioneering and decades ahead of the global community. The following were the important milestones in its gradual growth:

- 1901-02: First civilian batch of 4 British doctors arrived in the Sudan.
- 1903: The Wellcome Tropical Research Laboratories (WTRL) were established.
- 1903: Andrew Balfour took office as first Director of WTRL and MOH of Khartoum.
- 1904-24: The civilian Medical Department.
- 1924-48: The competent Sudan Medical Service (SMS).
- 1948- : The Ministry of Health (MOH).

In the aftermath of World War I (WWI) a concerted effort was needed to expand the health system network, control endemic diseases and anticipate health needs. To overcome these fundamental problems, in the absence of expatriate health personnel, one urgently-felt priority was to introduce Sudanese health cadres. The post WWI period, therefore, witnessed a breakthrough in the training of Sudanese health workers, and some pioneering programmes were initiated, notable among them were RH personnel. These programmes were the precursors of that were to ensure the development of the health care system as a successful attempt by the Anglo-Egyptian Condominium to integrate an underdeveloped colony within the realms of modern health care, using national personnel:

- 1918: MAs training at Port-Sudan.
- 1921: VMWs training at Omdurman Midwifery School
- 1925: Laboratory Assistants
- 1924: Physicians training (Kitchener School of Medicine, KSM)
- 1925: Auxiliary nurses
- 1931: Public Health Officers PHOs)
- 1933: Radiographers
- 1936: Dispensers and Assistant Pharmacists
- 1947: Health Visitors (HVs)
- 1948-2000: Some 38 state midwifery schools
- 1953: Laboratory Technicians
- 1953 Ophthalmic Assistants
- 1956: Postgraduate Diploma in Gynaecology and Obstetrics, Khartoum (DGOK)
- 1956: Nursing Sisters (Khartoum Nursing College, KNC)
- 1960: Dental Assistants
- 1963: Assistant Anaesthetists
- 1966: Pharmacists
- 1967: Statistical Clerks

#### 1.4 Public sector health facilities and manpower:

From Tables 1.2 and 1.3, an idea is gleaned about the distribution of health facilities and health manpower in Khartoum and Gezira States. Out of a total of 2,514 health facilities(2004), the share of Khartoum and Gezira states is shown in Table 1.2. Federal institutions in Khartoum State and Khartoum SMOH have about their share compared to population weight.

**Table 1.2: Percent distribution of health facilities in Khartoum and Gezira states compared to population weight, North Sudan**

No	State	Pop. Wt.	Specialist Hospital	General Hospital	Rural Hospital	Health Centre	Rural Disp.	All facilities
			%	%	%	%	%	%
	Khartoum SMOH	-	18.4	16.0	3.6	16.2	12.1	<b>13.0</b>
	Khartoum (Fed.)	-	31.6	10.0	0.0	0.0	0.0	<b>0.7</b>
<b>1.</b>	<b>Khartoum State</b>	<b>18.6</b>	<b>50.0</b>	<b>26.0</b>	<b>3.6</b>	<b>16.2</b>	<b>12.1</b>	<b>13.7</b>
<b>2.</b>	<b>Gezira State</b>	<b>13.2</b>	<b>13.2</b>	<b>12.0</b>	<b>17.1</b>	<b>19.2</b>	<b>19.8</b>	<b>19.2</b>

Out of a total of about 3,008 professional health personnel (specialists, registrars, MOs and HOs), the share of Khartoum and Gezira states is shown in Table 1.3. Federal institutions in Khartoum and Khartoum SMOH have about two-thirds (64.2%) of the country's professional health manpower (specialists, registrars, MOs and HOs), even with the exclusion of HOs, 59 percent of paramedical health personnel (pharmacists, PHOs, technicians and nutrition personnel) and 18.2 percent of auxiliary health personnel (MAs, HVs, NMWs, VMWs and TTBA). More often than not, Gezira State also boasted more than its share of different categories of health facilities and health manpower compared to its population weight.

**Table 1.3: Percent distribution of health personnel in Khartoum and Gezira states compared to population weight, North Sudan**

No	State	Pop. weight %	Category of health personnel			
			Professional*	Paramedical	Auxiliary	All
			%	%	%	%
	Khartoum SMOH	-	20.7	23.8	12.5	15.6
	Khartoum (Federal)	-	43.5	35.2	5.7	16.0
<b>1.</b>	<b>Khartoum State</b>	<b>18.6</b>	<b>64.2</b>	<b>59.0</b>	<b>18.2</b>	<b>31.6</b>
<b>2.</b>	<b>Gezira State</b>	<b>13.2</b>	<b>9.4</b>	<b>9.4</b>	<b>15.8</b>	<b>13.8</b>

- Excludes house-officers.

Comparing state shares to their population weights with regard to the distribution of health facilities and health manpower within SHCS reveals clear disparities, and for some other states, clear marginalization. This chronic mal-distribution situation is worsening over time, has proved to be notoriously difficult to rectify and needs innovative planning efforts to design solutions to it.

### 1.5 Rise of the private sector:

Private practice in the health sector was to develop over many years in association with SHCS. Expatriate physicians were not allowed to private practice, nor were national doctors after the establishment of KSM whose graduates first joined SMS in 1928. It was not until the late 1940s that Sudanese physicians were allowed to have their own practice in their private clinics after official office hours. Gradually, when some Sudanese doctors left the health service for one reason or the other, they were licensed to open full-time private clinics. Unlike their colleagues in the Ministry of Health, staff of the Faculty of Medicine of the University of Khartoum were not allowed to private practice and were given a clinical allowance in lieu, but in the late 1960s they acquired the option of either getting the allowance or private practicing outside official hours. The first venture of establishing a private hospital was in the late 1950s, when Dr. Abdulhamid Salih established *Dar Ashifa* Private Hospital. Real private sector ventures into health care delivery has started as recently as the 1990s with the advent of privatization of the economy and the Government abolition of free health care.

### 1.6 Problem analysis:

The contemporary picture of health facilities and health manpower in the official SHCS reveals that:

- The distribution of health facilities appears to be more balanced than that of health personnel, with excesses seen in the more developed central states which have historically made earlier demands for health care facilities.
- The penetration of health facilities and auxiliary health personnel to the periphery of the health care system<sup>9</sup> are fundamental assets to any successful health policy as this early presence led to the creation of socially more aggressive attitudes among the rural population to generate the will towards improving the quality of life.

- A wide spectrum of Sudanese health personnel, besides being a great asset to the potential development of the health care system, represented more progressive thinking towards improved social services in general.
- The gradual growth of health personnel training schools over the years and their remodeling to suit new requirements represented definite advances in health planning.
- Moreover, in recent decades professional cadres have resented poor working conditions at state level resulting in either their overcrowding in Khartoum or their loss to private practice, the Gulf and the West, with a very high attrition rate of brain drain.
- Nevertheless, the official SHCS sees only the tip of the iceberg. To compensate, clients seek avenues to the private sector, if they can afford the cost. The real size of those who seek to be medically treated by the private sector is, however, unknown to us.
- Moreover, historically, medical private practice has started as a way of increasing income outside official working hours, then developed as an acquired right, then became a safe haven from a bureaucratic civil service.
- During the last decade, with the adoption of a free market economy, medical private practice has flourished and expanded to the extent that we do not know exactly its share in health care delivery.
- We are ignorant of its real size, nor do we know the types of care delivered and by what type of private health facility. We do not know whether the response to the rising demand for high quality curative services, which could mean a resort to health facilities of the private sector, is causing a drift to privatization of health care, thus affecting the pattern of health care seeking behaviour in the population.
- We are ignorant of any real role played by this sector in health care delivery to the extent that we cannot delineate the boundaries of the private sector.
- We do not know the reasons for choice of different care providers; nor do we know whether the private sector has got advantages over the public sector.

<b>This study will attempt to answer these questions through the following objectives</b>
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## **2. OBJECTIVES**

The objectives of this study, meant to provide baseline data for comprehensive planning for the private sector, included:

- 2.1 To determine the size of the private sector by its different types.
- 2.2 To determine the types of private sector institutions.
- 2.3 To define the types and quality of care delivered by the private sector.
- 2.4 To identify the anticipated role of the private sector in health care delivery and the contribution of the government in encouraging the sector and how can we integrate the services of the two sectors.
- 2.5 To study the factors causing users of Health Care to opt for the Private Sector reviewing and unraveling reasons for such option from the of perspective the users. Thus, comparing utilization in domains of primitive, preventive and curative care, in both public and private sectors and assessing access (geographical and financial), quality, effectiveness and efficiency of such domains.
- 2.6 To submit a typed assignment report in English, together with an electronic copy.

## **3. METHODOLOGY**

### **3.1 Study Design:**

The study design will be a descriptive cross-sectional study reflecting the picture at the time of the survey.

### **3.2 Study Setting:**

The survey covered private health institutions in Khartoum State (in the cities of Khartoum, Khartoum North and Omdurman), and Gezira State (in the cities of Wad Medani, Hasaheisa and Kamlin), which encompass most of the private sector institutions in both Khartoum and Gezira states.

### **3.3 Study population:**

The study population included:

- Private hospitals
- Private health centers
- Full-time private clinics

### **3.4 Sample Size:**

The study population was a 10-25 percent random sample of::

- Private hospitals
- Private health centers of all types
- Private full-time clinics

### **3.5 Sampling frame:**

An inventory of all types of private sector health institutions licensed by the SMOH in Khartoum and Gezira States was composed. The listings were used as a sampling frame for selecting study units for the survey.

### **3.6 Data Collection:**

**Primary data:** A stratified random sample of the three types of full time private health facilities was visited by the research team. An interviewer-administered questionnaire, a check list and a client satisfaction score were used to collect data from the selected facilities.

**Secondary data:** Secondary sources of information about health activities during 2005 of both the private and the public sectors were used from State Ministry of Health in both Khartoum and Gezira, and from the Federal Ministry of Health for federal institutions in Khartoum State. Sources of information were verified by lengthy interviews with the staff in the concerned departments

### 3.7 Sampling Methodology:

- A stratified random sampling technique was employed to investigate various types of full-time private sector health facilities:
  - Hospitals
  - Health centers
  - Full-time clinics/laboratories
- In implementation of APW: 05/1644, field work for this report was done during the period January-March, 2006. Table 1 and Table 2 show the sample covered by field work from available private health sector institutions in Khartoum State and Gezira State, respectively. The selected institutions were subjected to the three survey instruments: Appendix I on activities, Appendix II on quality of care, and Appendix III on client satisfaction.

**Table 3.1.1: Private sector institutions covered in Khartoum State**

No.	Type of institution	Number	Number covered	Coverage%
1.	Hospitals	48	12	25.0
2.	Health centers	56	14	25.0
3.	Full-time clinics	199	40	20.1
	<b>Total</b>	<b>303</b>	<b>66</b>	<b>21.8</b>

**Table 3.2.1: Private sector health institutions covered in Gezira State**

No.	Type of private institution	Number	Number covered	Coverage%
1.	Hospitals	8	7	87.5
2.	Health centers	21	6	28.6
3.	Full-time clinics	23	7	30.4
	<b>Total</b>	<b>75</b>	<b>27</b>	<b>36.0</b>

### 3.8 Survey Instruments:

- An Interviewer-Administered Questionnaire: was used to collect quantitative data from the visited private sector institutions (Appendix I).
- A check list investigated the quality of private sector facility (Appendix II).
- A client satisfaction score assessed users satisfaction with services received (Appendix III).



### **3.9 Study Variables:**

**3.9.1 Quantitative data:** was collected on the following variables serving the objectives of the study:

**A. Background data:**

- Profit status
- Status of GOS investment concessions

**B. Type of facility and services:**

- Hospital
- Health centre
- Full time clinics
- Rural Dispensary
- Hospital bed
- Operation theatres
- Pharmacy/Drug store
- Laboratory
- X-Ray unit
- Ultrasound
- ECG
- ECHO
- Endoscopy

**B. Type of health manpower employed:**

- Specialists
- Registrar
- Medical Office
- House Officer
- Dentist
- Pharmacist
- Technicians
- Medical Assistant
- Health Visitor
- Midwife
- Nurse
- Public Health Officer

**C. Health care load undertaken:**

- Number of patients seen
- Number of admissions
- Number of operations performed
- Number of laboratory samples investigated
- Number of X-ray exposures taken
- Number of US exposures done
- Number of ECHO exposures done
- Number of Endoscopies performed

**D. Comparisons with public sector secondary data:** were made to delineate role of the private sector in health care delivery

**3.9.2 Qualitative data:**

On a scale from 1-3, scores were given for each of the studied private facilities using the following criteria to arrive at a mean quality of care (QOC) score (Appendix II):

- Building design
- Building condition
- Reception area
- Accommodation
- Accommodation, companion
- Theatre
- Equipment
- Air conditioning
- Adaptable beds
- Oxygen supply
- Standby generator
- Laboratory
- X-Ray
- Ultrasound
- ECG
- Pharmacy
- Registers
- Ambulance
- Parking area

**B. Mean client satisfaction score (CSS):** Based on a score of the following criteria (Appendix III):

- Facility environment
- Comfort/distance
- Waiting time
- Information/counseling
- Rapport
- Continuity
- Availability of treatment
- Cost of treatment
- Care received
- Future consultation of same facility

**3.10 Data Analysis:**

The data were entered onto an excel database and analyzed by counts, proportions, percentiles and means according to type of private sector facility.

## 4. RESULTS

### 4.1 Khartoum State:

#### 4.1.1 Profit status:

Table 4.1.1 shows the distribution of private health facilities by profit status in Khartoum State. The private sector derive is predominantly for profit. Only a few (23.3%) health centers are charity centers. The overall non-profit status is only 4.3 percent.

**Table 4.1.1: Distribution of types of private health facilities by profit status, Khartoum**

No.	Type of facility	No. of facilities	Profit status %	
			For profit	Not for profit
1.	Hospitals	48	0.0	100.0
2.	Health Centres	56	76.8	23.2
3.	Full-time clinic	199	100.0	0.0
4.	Part-time clinic	511	100.0	0.0
	<b>All private facilities</b>	<b>1,524</b>	<b>99.9</b>	<b>0.9</b>

#### 4.1.2 Investment concession status:

The investment concession status of the private sector dealing with health care delivery in Khartoum State is depicted in Table 4.1.2. Although applications for investment concessions were high, about half of those who applied were not satisfied either with the law or with the bureaucracy

**Table 4.1.2: Distribution of private facilities sample by investment status, Khartoum**

No.	Investment status	Percent
1.	<b>Applied for investment concessions from GOS:</b>	
	Applied	75.0
2.	<b>Reason/s for not applying:</b>	
	No seriousness	25.0
	No need	12.5
3.	<b>Intention to apply/reapply in near future:</b>	
	Yes	12.5
4.	<b>Applicants satisfaction with procedures:</b>	
	Satisfactory	50.0
5.	<b>Concessions received:</b>	
	Equipment	50.0
	Ambulances	50.0
	Vehicles	50.0
6.	<b>Reason/s for un-satisfaction with procedures:</b>	
	No law	37.5
	Unsatisfactory law	37.5
	Still pay duties	25.0
	Bureaucracy	37.5

### 4.1.3 Health facilities by sector and type:

Table 4.1.3 shows the distribution of health facilities by sector and type in Khartoum State during 2005. During that year the private sector in Khartoum State ran 48 hospitals, 56 health centers and 199 full-time clinics. These were served by 1,290 bed, 40 operation theatres, 40 laboratories, other special procedures, and 412 pharmacies/drug stores. Compared to the public sector, the private sector share in these facilities amounted to the provision of between 14.3 percent of endoscopies to 58.3 percent of hospitals in Khartoum State. The contribution of the private sector in health facilities of Khartoum State during 2005 was an average of 24.3 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics.

**Table 4.1.3: Distribution of health facilities by sector and type, Khartoum State, 2005**

No.	Category of Facility	Number of facilities			Private Sector share (%)
		Total Number	Public Sector	Private sector	
1.	Hospital	91	43	48	<b>58.3</b>
2.	Health centre	200	144	56	<b>28.0</b>
3.	Full time clinics	199	-	199	<b>100.0</b>
4.	Rural Dispensary	183	183	-	<b>0.0</b>
5.	Hospital bed	7,436	6,146	1,290	<b>17.3</b>
6.	Operation theatres	101	61	40	<b>39.6</b>
7.	Laboratory	323	187	136	<b>42.1</b>
8.	X-Ray unit	55	35	20	<b>36.3</b>
9.	Ultrasound	44	24	20	<b>45.4</b>
10.	ECG	35	15	20	<b>57.1</b>
11.	ECHO	8	6	2	<b>25.0</b>
12.	Endoscopy	14	12	2	<b>14.3</b>
13.	Pharmacy/Drug store	538	126	412	<b>76.6</b>
	<b>All</b>	<b>9,227</b>	<b>6,982</b>	<b>2,245</b>	<b>24.3</b>

**4.1.4 Health manpower by sector and category:**

Table 4.1.4 shows the distribution of health manpower by sector and category in Khartoum State during 2005. Professional health manpower engaged in the private sector in Khartoum State during 2005 included 257 specialists, 164 MOs, and 25 dentists. Compared to the public sector, the private sector share in these categories of health manpower amounted to engaging of between 24.6 percent of specialists to 10.1 percent of the MOs in Khartoum State during 2005. In assistance of these personnel and in comparison with the public sector, the private sector engaged other categories of health manpower in Khartoum State during 2005 that ranged between 5.7 percent of MWs to 61.3 percent of pharmacists. The contribution of the private sector in health personnel of Khartoum State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel.

**Table 4.1.4: Distribution of health manpower by sector and category, Khartoum State, 2005**

	Category of manpower employed	Number of full-time employees			Private Sector share (%)
		Total Number	Public Sector	Private Sector *	
1.	Specialists	1,044	787	257	24.6
2.	Registrar	541	541	-	0.0
3.	Medical Officer	1,617	1,453	164	10.1
4.	House Officer	1,840	1,840	-	0.0
5.	Dentist	133	108	25	18.8
6.	Pharmacist	672	260	412	61.3
7.	Technicians	4,468	3,130	1,338	29.9
8.	Medical Assistant	2,360	1,922	438	8.6
9.	Health Visitor	197	197	-	0.0
10.	Midwife	2,333	2,201	132	5.7
11.	Nurse	4,571	4,325	246	5.4
12.	Public Health Officer	152	152	-	0.0
	<b>All categories</b>	<b>19,928</b>	<b>16,916</b>	<b>3,012</b>	<b>15.1</b>

\* Estimated from the sample

**4.1.5 Health care load undertaken by sector:**

Table 4.1.5 shows the distribution of health care load by sector in Khartoum State during 2005. The health care load undertaken by the private sector in Khartoum State during 2005 included 1,366,890 patients seen, 152,611 admissions, 30,402 surgical operations performed and more than 700,000 investigations done. Compared to the public sector, the private sector share in this health care load undertaken amounted to between 6.7 percent of operations to 46.7 percent of ECG exposures. The contribution of the private sector in delivering all units of health care load in Khartoum State during 2005 was an average of 23.4 percent.

**Table 4.1.5: Distribution of health care load undertaken by sector, Khartoum State, 2005**

No.	Category of care undertaken	Units of care load undertaken			Private Sector share (%)
		Total Number	Public Sector	Private sector	
1.	Patients seen	6,292,555	4,925,665	1,366,890	21.7
2.	Admissions	491,422	338,811	152,611	31.1
3.	Operations	453,133	422,732	30,401	6.7
4.	Laboratory tests	2,014,573	1,420,149	594,424	29.5
5.	X-Ray exposures	403,003	321,068	81,935	20.3
6.	US exposures	94,337	52,680	41,657	44.2
7.	ECGs	60,485	32,219	28,266	46.7
8.	ECHO	6,349	5,565	784	12.3
9.	Endoscopy	16,320	14,875	1,445	9.4
	<b>All units of care</b>	<b>9,832,177</b>	<b>7,533,764</b>	<b>2,298,413</b>	<b>23.4</b>

**4.1.6 Mean quality of care (QOC) score:**

Table 4.1.6 shows the mean QOC score for private health facilities in Khartoum State as it stood in 2005. The mean QOC score was 86.7 percent. There were stark weaknesses in inadequate reception areas and small, or unavailable parking areas.

**Table 4.1.6: Private facilities by mean quality of care score, Khartoum State, 2005**

No.	Factor affecting quality of care	Mean score
1.	Building design	3.0
2.	Building condition	2.0
3.	Reception area	1.5
4.	Accommodation	5.0
5.	Accommodation, companion	3.0
6.	Theatre	3.5
7.	Equipment	2.5
8.	Air conditioning	3.0
9.	Adaptable beds	3.0
10.	Oxygen supply	3.0
11.	Standby generator	3.0
12.	Laboratory	2.5
13.	X-Ray	2.5
14.	Ultrasound	3.0
15.	ECG	3.0
16.	Pharmacy	2.5
17.	Registers	3.0
18.	Ambulance	2.0
19.	Parking area	1.0
	<b>Total mean score (out of 60):</b>	<b>52.0</b>

**4.1.7 Mean client satisfaction score (CSS):**

Table 4.1.7 shows the mean CSS for private health facilities in Khartoum State as it stood in 2005. Clients were generally satisfied with the services rendered, which was mostly their own choice. The mean CSS score was 86.7 percent.

**Table 4.1.7 Private facilities by mean client satisfaction score, Khartoum State, 2005**

No.	Factor affecting client satisfaction	Mean score
1.	Facility environment	3.0
2.	Comfort/distance	3.0
3.	Waiting time	3.0
4.	Information/counseling	2.0
5.	Rapport	2.0
6.	Continuity	2.0
7.	Availability of treatment	2.0
8.	Cost of treatment	3.0
9.	Care received	3.0
10.	Future consultation of same facility, if any	3.0
	<b>Total score (out of 30):</b>	<b>26.0</b>



## 4.2 Gezira State:

### 4.2.1 Profit status:

Table 4.2.1 shows the distribution of private health facilities by profit status in Gezira State. The private sector derive is predominantly for profit. Only a few (23.3%) health centers are charity centers. The overall non-profit status is only 4.3 percent.

**Table 4.2.1: Distribution of types of private facilities by profit status, Gezira State, 2005**

No.	Type of facility	No. of facilities	Profit status %	
			For profit	Not for profit
1.	Hospitals	9		
2.	Health Centres	21		
3.	Full-time clinic	23		
4.	Part-time clinic			
	<b>All private facilities</b>			

### 4.2.2 Investment concession status:

The investment concession status of the private sector dealing with health care delivery in Khartoum State is depicted in Table 4.2.2. Applications for investment concessions were low. Those who did not apply thought either the exercise was futile or there was no need for it.

**Table 4.2.2: Distribution of private facilities by investment status, Gezira State, 2005**

No.		Percent
1.	<b>Applied for investment concessions from GoS:</b>	
	Applied	37.5
2.	<b>Reason/s for not applying:</b>	
	No seriousness	25.0
	No need	37.5
3.	<b>Intention to apply/reapply in near future:</b>	
	Yes	25.0
4.	<b>Applicants satisfaction with procedures:</b>	
	Satisfactory	25.0
5.	<b>Concessions received:</b>	
	Equipment	25.0
	Ambulances	25.0
	Vehicles	25.0
6.	<b>Reason/s for un-satisfaction with procedures:</b>	
	No law	-
	Unsatisfactory law	-
	Still pay duties	-
	Bureaucracy	12.5

**4.2.3 Health facilities by sector, Gezira State:**

Table 4.2.3 shows the distribution of health facilities by sector and type in Gezira State during 2005. During that year the private sector in Gezira State ran 9 hospitals, 21 health centers and 23 full-time clinics. These were served by 200 beds, 9 operation theatres, 156 laboratories, other special procedures, and 229 pharmacies/drug stores. Compared to the public sector, the private sector share in these facilities amounted to the provision of between 6.2 percent of hospital beds to 40.1 percent of laboratories in Gezira State. The contribution of the private sector in health facilities of Gezira State during 2005 was an average of 14.1 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics.

**Table 4.2.3 : Distribution of health facilities by sector, Gezira State**

No.	Category Of Facility available	Number of facilities			Private Sector share (%)
		Total Number	Public Sector	Private sector	
1.	Hospital	63	54	9	14.3
2.	Health centre	185	164	21	11.4
3.	Full time clinics	23	-	23	100.0
4.	Rural Dispensary	263	263	-	0.0
5.	Hospital bed	3,236	3,036	200	6.2
6.	Operation theatres	57	48	9	15.8
7.	Pharmacy/Drug store	462	233	229	49.6
8.	Laboratory	389	233	156	40.1
9.	X-Ray unit	33	25	8	24.2
10.	Ultrasound	33	25	8	24.2
11.	ECG	17	11	6	35.3
12.	ECHO	-	-	-	-
13.	Endoscopy	-	-	-	-
	<b>All</b>	<b>4,761</b>	<b>4,092</b>	<b>669</b>	<b>14.1</b>

#### 4.2.4 Health manpower by sector, Gezira State:

Table 4.2.4 shows the distribution of health manpower by sector and category in Gezira State during 2005. Professional health manpower engaged in the private sector in Gezira State during 2005 included 97 specialists, 112 MOs, and 20 dentists. Compared to the public sector, the private sector share in these categories of health manpower amounted to engaging between 47.5 percent of specialists to 29.8 percent of the MOs in Gezira State during 2005. In assistance of these personnel and in comparison with the public sector, the private sector engaged other categories of health manpower in Gezira State during 2005 that ranged between 1.7 percent of nurses to 67 percent of pharmacists. The contribution of the private sector in health personnel of Gezira State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel.

**Table 4.2.4: Distribution of health manpower by sector, Gezira State**

No.	Category of Facility/manpower load	Number of facilities/manpower			Private Sector share (%)
		Total Number	Public Sector	Private sector	
1.	Specialists	204	107	97	<b>47.5</b>
2.	Registrar	-	-	-	-
3.	Medical Officer	376	264	112	<b>29.8</b>
4.	House Officer	-	-	-	-
5.	Dentist	43	23	20	<b>46.5</b>
6.	Pharmacist	200	66	134	<b>67.0</b>
7.	Technicians	277	237	40	<b>14.4</b>
8.	Medical Assistant	896	879	17	<b>1.9</b>
9.	Health Visitor	82	82	-	<b>0.0</b>
10.	Midwife	1,394	1,365	29	<b>2.1</b>
11.	Nurse	1,972	1,938	34	<b>1.7</b>
12.	Public Health Officer	77	77	-	<b>0.0</b>
	<b>All categories</b>	<b>19,928</b>	<b>16,916</b>	<b>3,012</b>	<b>15.1</b>

**4.2.5 Health care undertaken by sector, Gezira State:**

Table 4.2.5 shows the distribution of health care load by sector in Gezira State during 2005. The health care load undertaken by the private sector in Gezira State during 2005 included 86,000 patients seen, 5,300 admissions, 2,900 surgical operations performed and more than 32,000 investigations done. Compared to the public sector, the private sector share in this health care load undertaken amounted to between 2.4 percent of ECG exposures to 7.3 percent of US exposures. The contribution of the private sector in delivering all units of health care load in Gezira State during 2005 was an average of only 3.5 percent.

**Table 4.2.5: Distribution of health care load undertaken by sector, Gezira State**

No.	Category of care undertaken	Units of care load undertaken			Private Sector share (%)
		Total Number	Public Sector	Private sector	
1.	Patients seen	2,856,214	2,770,214	86,000	<b>3.0</b>
2.	Admissions	117,673	112,373	5,300	<b>4.5</b>
3.	Operations	55,313	52,413	2,900	<b>5.2</b>
4.	Laboratory tests	531,903	504,503	27,400	<b>5.2</b>
5.	X-Ray exposures	59,141	55,641	3,500	<b>5.9</b>
6.	US exposures	25,931	24,041	1,890	<b>7.3</b>
7.	ECGs	8,418	7,468	950	<b>2.4</b>
8.	ECHO	-	-	-	-
9.	Endoscopy	-	-	-	-
	<b>All units of care</b>	<b>3,654,593</b>	<b>3,526,653</b>	<b>127,940</b>	<b>3.5</b>

#### 4.2.6 Mean quality of care (QOC) score:

Table 4.1.6 shows the mean QOC score for private health facilities in Khartoum State as it stood in 2005. The mean QOC score was 65.5 percent. There were stark weaknesses in building design, inadequate reception areas, small or unavailable parking areas and unavailability of standard hospital investigation facilities.

**Table 4.2.6: Private facilities by mean quality of care score, Gezira State, 2005**

No.	Factor affecting quality of care	Mean score
1.	Building design	1.5
2.	Building condition	2.5
3.	Reception area	1.5
4.	Accommodation	3.5
5.	Accommodation, companion	3.0
6.	Theatre	3.5
7.	Equipment	2.5
8.	Air conditioning	3.0
9.	Adaptable beds	2.0
10.	Oxygen supply	2.0
11.	Standby generator	3.0
12.	Laboratory	1.3
13.	X-Ray	1.3
14.	Ultrasound	1.3
15.	ECG	1.3
16.	Pharmacy	1.3
17.	Registers	2.5
18.	Ambulance	1.0
19.	Parking area	1.3
	<b>Total mean score (out of 60):</b>	<b>39.3</b>

**4.2.7 Mean client satisfaction score(CSS):**

Table 4.2.7 shows the mean CSS for private health facilities in Gezira State as it stood in 2005. Clients were generally satisfied with the services rendered, which was mostly their own choice. The mean CSS score was 75 percent. Weaknesses were in availability of a hospital pharmacy and comfort/distance from the hinterland of Gezira to Wad Medani.

**Table 4.2.7: Private facilities by mean client satisfaction score, Gezira State, 2005**

No.	Factor affecting client satisfaction	Mean score
1.	Facility environment	3.0
2.	Comfort/distance	2.0
3.	Waiting time	3.0
4.	Information/counseling	2.0
5.	Rapport	2.0
6.	Continuity	2.0
7.	Availability of treatment	1.5
8.	Cost of treatment	1.0
9.	Care received	3.0
10.	Future consultation of same facility, if any	3.0
	<b>Total score (out of 30):</b>	<b>22.5</b>

## 5. DISCUSSION

### **Khartoum State:**

Driven largely by profit and seeking investment concessions with a high rate of applications for investment concessions, about half of which were not satisfied either with the law or with the bureaucracy, and compared to the public sector, the private sector contribution in health facilities of Khartoum State during 2005 was an average of 24.3 percent. The sector provided 17.3 percent of hospital beds and between 14.3-42.1 percent of investigation facilities (endoscopies and laboratories, respectively). Compared to the public sector, the private sector share in employing different categories of health manpower amounted to engaging of between 24.6 percent of specialists (overwhelming part time from the public sector) to 10.1 percent of the MOs in Khartoum State during 2005. Assisting these professional personnel, the private sector engaged other categories of health manpower that ranged between 5.7 percent of MWs to 61.3 percent of pharmacists. The contribution of the private sector in health personnel of Khartoum State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel. Compared to the public sector, the private sector share in the health care load undertaken amounted to between 6.7 percent of operations to 46.7 percent of ECG exposures. The contribution of the private sector in delivering all units of health care load in Khartoum State during 2005 was an average of 23.4 percent. The mean QOC score was 66.7 percent, and the mean CSS was 86.7 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics.

### **Gezira State:**

Driven largely by profit and not seeking investment concessions with a low rate of applications for investment concessions, about one third of which were not satisfied with the bureaucracy and compared and compared to the public sector, the private sector contribution in health facilities of Gezira State during 2005 was an average of 14.1 percent. The sector provided only 6.2 percent of hospital beds and between 15.8-49.6 percent of investigation facilities (surgical operation theatres and laboratories, respectively). Compared to the public sector, the private sector share in employing different categories of health manpower amounted to engaging of between 47.5 percent of specialists (overwhelmingly part time from the public sector) to 29.8 percent of the MOs in Khartoum State during 2005. Assisting these professional personnel, the private sector engaged other categories of health manpower that ranged between 1.7 percent of nurses to 67 percent of pharmacists. The contribution of the private sector in health personnel of Gezira State during 2005 was an average of 15.1 percent. It is pertinent to note that the private sector had no public health personnel. Compared to the public sector, the private sector share in this health care load undertaken amounted to between 6.7 percent of operations to 46.7 percent of ECG exposures. The contribution of the private sector in delivering all units of health care load in Gezira State during 2005 was an average of 23.4 percent. The mean QOC score was 66.7 percent, and the mean CSS was 86.7 percent. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics. It is pertinent to note that the private sector had no contribution to rural areas, while it contributed 100 percent of urban full time clinics. Compared to the public sector, the private sector share in the health care load undertaken amounted to between 2.4 percent of ECG exposures to 7.3 percent of US exposures. The contribution of the private sector in delivering all units of health care load in Gezira State during 2005 was an average of only 3.5 percent. The QOC score was 65.5 percent, and the CSS was 75.0 percent.

## 6. CONCLUSIONS

**Conclusions:** It was concluded that:

- The private sector is playing an important role in health care delivery in Khartoum State, but to a lesser extent in Gezira State.
- However, this role needs to be better supervised and directed for a complementary role between the public and private health sectors.
- The part contributed by specialists from the public sector working part time with the private sector is overwhelmingly.
- Tables 6.1.1 and 6.2.1 summarize all health care delivery indicators: distribution of health facilities, health manpower and health care load by sector for Khartoum state and Gezira State, respectively.



**Table 6.1.1: Distribution of Health Facilities, manpower and load by Sector, Khartoum State**

	Category of Facility/manpower load	Number of facilities/manpower			Private Sector share (%)
		Total Number	Public Sector	Private sector	
<b>1.</b>	<b>Health facilities:</b>				
	1.1 Hospital	91	43	48	<b>58.3</b>
	1.2 Health centre	200	144	56	<b>28.0</b>
	1.3 Full time clinics	199	-	199	<b>100.0</b>
	1.4 Rural Dispensary	183	183	-	<b>0.0</b>
	1.5 Hospital bed	7,436	6,146	1,290	<b>17.3</b>
	1.6 Operation theatres	101	61	40	<b>39.6</b>
	1.7 Pharmacy/Drug store	538	126	412	<b>76.6</b>
	1.8 Laboratory	323	187	136	<b>42.1</b>
	1.9 X-Ray unit	55	35	20	<b>36.3</b>
	1.10Ultrasound	44	24	20	<b>45.4</b>
	1.11ECG	35	15	20	<b>57.1</b>
	1.12ECHO	8	6	2	<b>25.0</b>
	1.13Endoscopy	14	12	2	<b>14.3</b>
<b>2.</b>	<b>Health manpower:</b>				
	2.1 Specialists	1,044	787	257	<b>24.6</b>
	2.2 Registrar	541	541	-	<b>0.0</b>
	2.3 Medical Officer	1,617	1,453	164	<b>10.1</b>
	2.4 House Officer	1,840	1,840	-	<b>0.0</b>
	2.5Dentist		168		
	2.6 Pharmacist	672	260	412	<b>61.3</b>
	2.7 Technicians	4,468	3,130	1,338	<b>29.9</b>
	2.8 Medical Assistant	2,360	1,922	438	<b>8.6</b>
	2.9 Health Visitor	197	197	-	<b>0.0</b>
	2.10Midwife	2,333	2,201	132	<b>5.7</b>
	2.11 Nurse	4,571	4,325	246	<b>5.4</b>
	2.12Public Health Officer	152	152	-	<b>0.0</b>
<b>3.</b>	<b>Care undertaken:</b>				
	3.1 Patients seen	6,292,555	4,925,665	1,366,890	<b>21.7</b>
	3.2 Admissions	491,422	338,811	152,611	<b>31.1</b>
	3.3 Operations	452,001	422,732	29,269	<b>6.5</b>
	3.4 Laboratory tests	1,611,615	1,420,149	191,466	<b>11.9</b>
	3.5 X-Ray exposures	339,614	321,068	18,546	<b>5.5</b>
	3.6 US exposures	71,982	52,680	19,302	<b>26.8</b>
	3.7 ECGs	37,296	32,219	5,077	<b>13.6</b>
	3.8 ECHO	6,349	5,565	784	<b>12.3</b>
	3.9 Endoscopy	15,320	14,875	1,445	<b>9.4</b>
<b>4.</b>	<b>Mean QOC score (%):</b>				<b>86.7</b>
<b>5.</b>	<b>Mean CSS (%):</b>				<b>86.7</b>

**Table 6.2.1: Distribution of Health Facilities, manpower and load by Sector, Gezira State**

	Category of Facility/manpower load	Number of facilities/manpower			Private Sector share (%)
		Total Number	Public Sector	Private sector	
<b>1.</b>	<b>Health facilities:</b>				
	1.1 Hospital	63	54	9	<b>14.3</b>
	1.2 Health centre	185	164	21	<b>11.4</b>
	1.3 Full time clinics	23	-	23	<b>100.0</b>
	1.4 Rural Dispensary	263	263	-	<b>0.0</b>
	1.5 Hospital beds	3,236	3,036	200	<b>6.2</b>
	1.6 Operation theatres	57	48	9	<b>15.8</b>
	1.7 Pharmacy/Drug store	462	233	229	<b>49.6</b>
	1.8 Laboratory	389	233	156	<b>40.1</b>
	1.9 X-Ray unit	33	25	8	<b>24.2</b>
	1.10 Ultrasound	25,931	24,041	1,890	<b>7.3</b>
	1.11 ECG	8,418	7,468	950	<b>2.4</b>
	1.12 ECHO	-	-	-	-
	1.13 Endoscopy	-	-	-	-
<b>2.</b>	<b>Health manpower:</b>				
	2.1 Specialists	204	107	97	<b>47.5</b>
	2.2 Registrar	-	-	-	-
	2.3 Medical Officer	376	264	112	<b>29.8</b>
	2.4 Dentist	-	-	-	-
	2.5 Pharmacist	43	23	20	<b>46.5</b>
	2.6 House Officer	200	66	134	<b>67.0</b>
	2.7 Technicians	277	237	40	<b>14.4</b>
	2.8 Medical Assistant	896	879	17	<b>1.9</b>
	2.9 Health Visitor	82	82	-	<b>0.0</b>
	2.10 Midwife	1,394	1,365	29	<b>2.1</b>
	2.11 Nurse	1,972	1,938	34	<b>1.7</b>
	2.12 Public Health Officer	77	77	-	<b>0.0</b>
<b>3.</b>	<b>Care undertaken:</b>				
	3.1 Patients seen	2,856,214	2,770,214	86,000	<b>3.0</b>
	3.2 Admissions	117,673	112,373	5,300	<b>4.5</b>
	3.3 Operations	55,313	52,413	2,900	<b>5.2</b>
	3.4 Laboratory tests	531,903	504,503	27,400	<b>5.2</b>
	3.5 X-Ray exposures	59,141	55,641	3,500	<b>5.9</b>
	3.6 US exposures	25,931	24,041	1,890	<b>7.3</b>
	3.7 ECGs	8,418	7,468	950	<b>2.4</b>
	3.8 ECHO	-	-	-	-
	3.9 Endoscopy	-	-	-	-
<b>4.</b>	<b>Mean QOC score (%):</b>				<b>65.5%</b>
<b>5.</b>	<b>Mean CSS (%):</b>				<b>75.0%</b>

## **7. RECOMMENDATIONS**

Recommendations call for:

7.1 Before any private sector hospital, or other health facility, is licensed the design must fit with standard health facility architecture.

7.2 Standard health facility designs must be made available for private sector investors.

7.3 There is need to institutionalize the role played part time by public sector health personnel in health care delivery of private sector health institutions.

7.4 There need for some form of partnership between the public and the private sectors in health care delivery with sharing of responsibilities which needs to be discussed by the stakeholders.

## 8. REFERENCES

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## 9. APPENDICES

APPENDIX I		Prof A. Bayoumi		P. 1 of 6.	
<b>WHO/FEDERAL MIISTRY OF HEALTH, SUDAN</b> <b>DIRECTORATE GENERAL OF HEALTH PLANNING AND DEVELOPMENT</b> <b>ROLE OF THE PRIVATE SECTOR IN HEALTH CARE DELIVERY</b> <b>IN KHARTOUM AND GEZIRA STATES</b> <b>SURVEY INSTRUMENT OF PRIVATE HEALTH FACILITIES</b>					
Facility Name: ..... State: ..... Town: .....		Survey No. :			
1.	Type of private health facility:	Hospital	1		
		Health center	2		
		Full time clinic/laboratory	3		
2.	Profit status:	Profit	1		
		Mixed	2		
3.	Applied for concessions from GOS	Yes	1		
		No	2		
4.	If no, why?	No law	1		
		Delays	2		
		Not interested	3		
		NA	4		
5.	If yes, was concession satisfactory?	Satisfactory	1		
		Not Satisfactory	2		
		NA	3		
6.	If not satisfactory, what is needed?		Yes	No	
		Concessions on equipment	1	2	
		Concessions on drugs	1	2	
		Concessions on ambulances	1	2	
	Concessions on vehicles	1	2		
7.	Day and Shift work:	3 shifts	1		
		2 shifts	2		
		1 shift	3		

			FT	PT
8.	<b>Personnel:</b>	<b>Specialists</b>		
		<b>Registrars</b>		
		<b>MOs</b>		
		<b>MAAs</b>		
		<b>Sisters</b>		
		<b>HVs</b>		
		<b>AHVs</b>		
		<b>NMWs</b>		
		<b>MWs</b>		
		<b>Nurses</b>		
		<b>Laboratory Technicians</b>		
		<b>Laboratory Assistants</b>		
		<b>X-ray Technicians</b>		
		<b>X-ray Assistants</b>		
		<b>Pharmacists</b>		
		<b>Assistant Pharmacists</b>		
		<b>Nutritionists</b>		
		<b>Dieticians</b>		
<b>Psychologists</b>				
<b>Social workers</b>				
<b>Labourers</b>				
9.	<b>No. of patients seen last 12 months</b>	<b>Number</b>		
10.	<b>Number of admissions last 12 months</b>			
11.	<b>Operations done last 12 months:</b>	<b>Major</b>		
		<b>Minor</b>		
		<b>Total</b>		
12.	<b>Number of laboratory tests last 12 months</b>			
13.	<b>Number of x-rays last 12 months</b>			
14.	<b>Number of US exposures last 12 months</b>			
15.	<b>Number of ECGs last 12 months</b>			

<b>APPENDIX II</b> <span style="float: right;"><b>Prof A. Bayoumi</b></span> <b>WHO/FEDERAL MIISTRY OF HEALTH, SUDAN</b> <b>DIRECTORATE GENERAL OF HEALTH PLANNING AND DEVELOPMENT</b> <b>ROLE OF THE PRIVATE SECTOR IN HEALTH CARE DELIVERY</b> <b>IN KHARTOUM AND GEZIRA STATES</b>  <b>QUALITY OF PRIVATE SECTOR FACILITY</b>	
<b>Facility Name:</b> ..... <b>State:</b> ..... <b>Town:</b> .....	<b>Survey Code. :</b> <input style="width: 100%;" type="text"/>
Special (3), adapted (1) Very good (3), Good (2), Fair (1) Spacious (3), small (1) SR private bath (3), SR (2), wards (1), all (6) Present (3), not present (1) Large (3), small (1), both (4) Very good (3), Good (2), Fair (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Present (3), not present (1) Spacious (2), small (1), None (0)	Building design Building condition Reception area Accommodation Accommodation, companion Theatre Equipment Air conditioning Adaptable beds Oxygen supply Standby generator Laboratory X-Ray Ultrasound ECG Pharmacy Registers Ambulance Parking area  TOTAL SCORE (out of 60): <input style="width: 100%;" type="text"/>

<p><b>APPENDIX III</b> <span style="float: right;"><b>Prof A. Bayoumi</b></span></p> <p><b>WHO/FEDERAL MIISTRY OF HEALTH, SUDAN</b></p> <p><b>DIRECTORATE GENERAL OF HEALTH PLANNING AND DEVELOPMENT</b></p> <p><b>ROLE OF THE PRIVATE SECTOR IN HEALTH CARE DELIVERY</b></p> <p><b>IN KHARTOUM AND GEZIRA STATES</b></p> <p><b>CLIENT SATISFACTION SCORE OF PRIVATE SECTOR FACILITY</b></p>																							
<p><b>Facility Name:</b> .....</p> <p><b>State:</b> .....</p> <p><b>Town:</b> .....</p>	<p><b>Survey No. :</b> <input style="width: 100px;" type="text"/></p>																						
<p><b>Scoring (Score 3 or 1)</b></p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Facility environment</td><td style="border: 1px solid black; width: 50px;"></td></tr> <tr><td style="padding: 2px;">Comfort/distance</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Waiting time</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Information/counseling</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Rapport</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Continuity</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Availability of treatment</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Cost of treatment</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Care received</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px;">Will you consult facility in future</td><td style="border: 1px solid black;"></td></tr> <tr><td style="padding: 2px; text-align: right;"><b>TOTAL SCORE (out of 30):</b></td><td style="border: 1px solid black;"></td></tr> </table>	Facility environment		Comfort/distance		Waiting time		Information/counseling		Rapport		Continuity		Availability of treatment		Cost of treatment		Care received		Will you consult facility in future		<b>TOTAL SCORE (out of 30):</b>	
Facility environment																							
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Care received																							
Will you consult facility in future																							
<b>TOTAL SCORE (out of 30):</b>																							
<p><b>Reasons for choosing this facility:</b></p> <p>.....</p> <p>.....</p> <p>.....</p>																							