Health Care Financing under Structural Adjustment

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HEALTH CARE FINANCING UNDER STRUCTURAL ADJUSTMENT: SOME REFLECTIONS FROM THE HEALTH INSURANCE EXPERIENCE OF KHARTOUM STATE, SUDAN

Abstract: The study aims at investigating the different aspects associated with the adoption of health insurance as financing mechanism for curative health services in the Sudan. Specifically, it aims at examining the general features of the insurance plan and its likely impact on utilization, access, efficiency, and quality of the services provided under the insurance scheme. The study also attempts to examine the potentials and limitations of the scheme.

The research was conducted in Khartoum State, which is a pioneering State in adopting the insurance plan. Both primary and secondary data have been used in the study. Primary data were collected through a household survey conducted in three residential areas. The total sample size, randomly selected, is 341 households of which 210 are insured and 131 are uninsured.

One of the main findings of the study is that the insurance scheme has contributed to overcoming many shortcomings associated with the application of user charges financing such as scarcity of financial resources for the health sector and lack of access to health services. The study has also revealed that the health insurance programme has positive implications for the utilization of public health services and provision of equal access to health services.

The study recommends expansion of the insurance coverage to include all segments of the population, injection of extra financial resources into the health sector, reduction of the negative effects of the insurance scheme such as adverse selection and moral hazards, and rationalization of resource use. The quality of the services should be enhanced and incentives should be provided to the staff.

1. Introduction

1.1 Background

Since 1992, the government of the Sudan has started implementing comprehensive macroeconomic reforms reflecting the typical features of Structural Adjustment Programs (SAPs) under “liberalization policies”. Because of the adoption of SAPs, the government spending on health has been significantly reduced although the sector was already experiencing, before the implementation of SAPs, many difficulties that were mainly attributed to the severe deterioration in economic conditions. These difficulties were reflected in the insufficient resources allocated to the sector and inefficiency in the utilization of the resources, the unsatisfactory and unequal geographical distribution of the health care facilities and personnel, the deterioration in the work environment, and the continuous decline in the work force involved in the sector.

However, in the Sudan, the economic reforms of the liberalization policies have led to fundamental changes in the health sector. Health care facilities have been negatively affected by the shortage of finance resulting from the curtailment of government spending allocated to health services and the limited success of the newly introduced co-payment system (Elias 1999). At the same time, there has been much evidence that the new economic reforms have led to a decline in the real income of the majority of the population and, consequently, in their ability to pay for the costly bill of health services, previously provided freely when people were in better living conditions (Ali 1994; Sahl 1996; Awad 1997).

The main objective of the newly introduced co-payment mechanism of "user charges" is to compensate for the reduction of government finance to the health services through channels other than the government budget, and thus to guarantee the sustainability of providing finance for the health services. However, the claimed objective for the imposition of user charges was to improve the quality and efficiency of the health services.

It has been realized that the user fees system has made a very limited success as a viable funding mechanism due to the adverse environment created by the economic reforms, which made public hospital users unable to pay for the costly bill of health care. Furthermore, the encouragement of private provision of health services has induced a shift in the demand for health care by the better-off people from public to private health institutions. This has led to a further deterioration in the quality of the services due to the collapse of the cross-subsidization mechanism that was assumed to govern the new financing mechanism (Elias 1999).

Because of the difficulties associated with the applications of the user fees system, in 1995 the government of the Sudan launched a new financing system known as "National Health Insurance Programme". The insurance programme was adopted to secure the provision of sustainable curative health services at a reasonable quality and price.

In Khartoum State, implementation of the health insurance program began in 1996 and by now, the insurance program has been adopted in 18 states, of which only one state is a southern state. The insurance programme in Khartoum State covers about 550,000 inhabitants, representing about half the number of the total population covered in the country. Presently, insurance administration takes 4% of the total salary of the majority of government employees as insurance premium. Insurance programmes offer services for many diseases and exclude treatment of some diseases, namely, heart disease, renal failure, cancer and dental disease - providing coverage for these diseases is known to be associated with high cost.

1.2 Statement of the Problem

Experiences of different countries implementing one form or another of insurance schemes have shown that insurance programmes have obvious contribution to raising access to services, and to raising equity, efficiency and sufficiency of the services provided. Despite the numerous potential advantages of insurance programmes, and despite the fact that insurance coverage in the Sudan is witnessing a significant increase, until now it has been restricted to salary recipients, mainly in the public sector, where the authorities can secure receiving the premium in a regular manner. Restrictive coverage of insurance plans represents a real barrier for insurance plans as a

financing mechanism primarily introduced to raise accessibility to health services. This reality could be further clarified by revealing that about 80% of the Sudanese people are working in the agricultural sector and a considerable proportion of the rest are engaged in informal activities. Functioning of the insurance plan may also be questionable considering the poor situation of the health service infrastructures and uneven distribution of the working ones.

The experience of the health sector with the insurance plan is very recent and no studies have yet been conducted in the area. Therefore, there is an urgent need to study the different aspects associated with the implementation of the insurance plan as a financing mechanism, and far reaching effects on accessibility, efficiency, quality and utilization of health services are anticipated. It has been realized that changing either the funding mechanisms (such as general taxation, co-payment systems and insurance) or the payment mechanisms of health services would have serious implications regarding equity, utilization, access, efficiency and quality in the health care system. Hence, the outcomes of the study may be needed for academic purposes and policy making, particularly in the presence of the current economic difficulties and widespread poverty. Under such circumstances, policy makers should find ways and means that permit poor people to satisfy their basic needs, such as food, health and education.

1.3 Research Questions

The application of the insurance plan in the Sudan began very recently, and until now, no serious attempt has been made to evaluate this new financing mechanism. Therefore, many questions may arise about the incidence of the health plan: How can the insurance coverage be extended to all the people in a huge country such as the Sudan? By what means can the authorities collect the premium from people outside the formal sector? Is the insurance programme able to overcome the shortcomings of the fees system? What is the likely impact of the insurance plan on increasing accessibility to health services for the growing number of the poor people? What is the likely impact on efficiency and quality of publicly provided health services? What are the obstacles and challenges facing the insurance plan? How can these difficulties be eliminated? What are the potentialities of the insurance programme as a viable financing mechanism, so that it can be adopted and applied in a wider manner?

1.4 Objectives of the Study

The overall objective of the study is to evaluate the health insurance plan of the Sudan. The study is interested in the following specific objectives:

i) To reveal the main features of the Sudanese National Health Insurance Programme;

ii) To examine the likely impact of the insurance program on aspects of utilization, access, efficiency and quality of publicly provided curative health services;

iii) To uncover the limitations and obstacles affecting the program;

iv) To explore the potentialities of the program as a viable and plausible financing mechanism for curative health services; and

v) To recommend some measures that may help to implement and promote the program.

1.5 Research Hypotheses

The study is based on the following hypotheses:

i) Health insurance programme can generate sizable financial resources for the health service sector;

ii) Health insurance programme can increase accessibility to service utilization;

iii) Inherited difficulties afflicting the health sector negatively affect the Sudan's health insurance plan; and

iv) Universal coverage remains the main challenge for different financing schemes particularly insurance plans.

1.6 Research Methodology

1.6.1 Research Setting

The study was conducted in Khartoum State because of the concentration of health care facilities and personnel there. Moreover, Khartoum is a pioneering state with regard to the implementation of the health insurance programme. Therefore, the results obtained are thought to be more representative and indicative.

1.6.2 Data Sources and Types

Both secondary and primary data have been used in the study. The primary data have been collected through household survey besides information extracted from official reports and statistics issued by the related institutions. Secondary documented data have been obtained from published and unpublished literature related to the topic.

1.6.3 Data Collection Techniques

The primary data have been collected using questionnaires on selected residential areas. Interviews have also been conducted with key informants, doctors and other medical staff to investigate their opinion regarding service provision under different health financing schemes.

The primary data collected through the questionnaires provided the following information:

i) Socio-economic characteristics of the households;

ii) Cost incurred in seeking treatment;

iii) Ability to acquire adequate services under different payment mechanisms;

iv) Consumer assessment of the quality of the services provided;

v) Opinion about the insurance programme;

vi) Satisfaction gained from seeking treatment under different cost-recovery schemes; and

vii) Health seeking behaviour under the insurance scheme.

1.6.4 Sampling Procedure

A multi-stage simple random sampling technique has been employed in the study. According to the latest population census of 1993, Khartoum State is divided into three provinces: Khartoum, Khartoum North and Omdurman. Initially, Khartoum province was randomly selected from the three provinces making Greater Khartoum. Khartoum province comprises two urban local councils (Khartoum and Khartoum Sharq). In the second step, the Khartoum local council was randomly selected. The Khartoum council comprises 37 residential areas (*Hay*). Consequently, four residential areas were selected (10% of the total residential areas in the council). The selected residential areas are Al Daim, Al Sikka Hadeed, Al Mogran and Tuti. The number of households in these residential areas are 1181, 367, 506 and 482, respectively. Thereafter, 15% of the number of households in each residential area has been randomly selected; this gives a sample of 481 households. However, the actual size taken is 341 households, out of which 210 are insured and 131 are uninsured. The percentage of households to be interviewed from each residential area was decided according to the advice of some specialists in the Central Bureau of Statistics by considering the homogeneity of the population and the cost factor.

1.7 Data Analysis

Both qualitative and quantitative analyses have been employed in the study. Descriptive analysis tools, such as frequencies and percentages, have been used to study the socio-economic characteristics of the respondents and to examine the impact of the insurance programme on the provision and utilization of health services.

1.8 Organization of the Study

Section one gives the general outlines of the study. Section two is devoted to the review of literature related to SAPs and health. The third section provides a general outlook of the health sector in the Sudan. Section four constitutes the results of the survey and discussion of the results. The last section is devoted to concluding remarks and recommendations.

2. MACROECONOMIC REFORM, SAPs AND HEALTH

2.1 Introduction

This section provides a critical review of the literature related to SAPs and their impact on the health sector. It begins by showing the major features of SAPs. Then it discusses the relation between macroeconomic reforms, particularly SAPs, and health. Moreover, it sheds light on the debate on growth and health. The main elements of health insurance financing mechanism are also discussed together with a framework for assessing health care systems.

2.2 Structural Adjustment and Stabilization Programmes

Structural adjustment programmes were started in 1980 by the World Bank, while stabilization programmes have been implemented by the IMF for the LDCs since 1975. Before 1980, finance by the World Bank was project finance, which is a very long duration loan concentrating on infrastructural projects. In 1980, the WB changed its emphasis from project finance to structural adjustment programmes, which are quick disbursing loans to avoid balance of payment deficits and to enable the adjusting countries to meet their debt obligations.

The World Bank (1990, 8) defines Stabilization and Structural Adjustment Programmes as follows:

- Stabilization: A policy (generally relying on demand management) to achieve sustainable fiscal and balance of payments of current account deficits and to reduce the rate of price inflation.

- Structural Adjustment: A reform of policies and institutions covering microeconomic (such as taxes and tariffs), macroeconomic (fiscal policy) and institutional interventions. These changes are designed to improve resource allocation, increase economic efficiency, expand growth potential, and increase resilience to shocks.

- Adjustment: A policy to achieve internal and external balance and changes in the structure of incentives and institutions, or both.

Further detailed explanations of the components of structural adjustment programmes provided by Cornia et al. (1987) divide them into three sets of policies:

i) Expenditure-reducing policies (demand management policies) aiming at reducing aggregate demand components to reduce budgetary deficit and deficit in the external balance.

ii) Expenditure-switching policies aiming at moving productive resources from non-tradable goods sector to tradable goods sector and from consumption to investment. Expenditure-switching policies consist of a set of policies in the areas of exchange rate (devaluation, import control, tariff, etc), trade intervention, taxes, product pricing, and mobility factor.

iii) Institutional and policy reforms such as trade liberalization, reduced role of the state in the economy, fiscal reform, privatisation of the financial market, reduced exchange control, price reform, etc.

The IMF provides conditional loans and divides the payment into branches. The major conditions of the IMF are:

i) The IMF requires the deficit country to devaluate its currency with the objective of encouraging exports and reducing imports as exports have positive correlation and imports have negative correlation with the exchange rate. If exchange is defined in the national currency, then:

$$dM/de > 0 \; ; \; dX/de < 0$$

Where

e = exchange rate M= imports X = exports

ii) The IMF calls for reducing aggregate demand variables (consumption, investment, and government expenditure). Consumption is to be reduced by increasing taxation, whereas investment demand is to be reduced by raising interest rates. Furthermore, government expenditure on goods and services should also be reduced, and usually health and education are the most affected services by the cutback in government spending. Here, user fees are introduced to compensate the cutback in government spending, which may be the true motive behind the introduction of fees despite the different justifications presented by the designers of those policies. Generally, SAPs are mainly concerned with restoring growth and efficiency in the context of a stabilized economy.

iii) Some of the general features of SAPs are that they have macroeconomic components identical with the IMF analyses and policies. In addition, they have institutional reforms taking care of the supply side of the economy such as liberalising the internal trade, reducing the role of the state in the economy, and reforming the public enterprise sector.

Structural adjustment programmes as prescribed for the LDCs are characterized by some basic features. Firstly, they are typical in their context. Secondly, they are comprehensive. Thirdly, they are demand management policies, which are contractionary in nature.

SAPs are usually monitored based on limited sets of macroeconomic variables (such as the rate of price inflation and budgetary deficit), and no adequate consideration, or even attention, is given to the performance of welfare variables such as income of the poor, unemployment, malnutrition rates and child mortality rates (Cornia et al. 1987).

2.3 Adjustment Policies in the Sudan and Other Developing Countries

The experience of the Sudan with SAPs dates back to the 1970s. During the period 1978-1985, the Sudan and the IMF signed a number of stabilization programmes. Those were as follows: June 1978, a one-year programme; May 1979, a three-year programme; February 1982, a one-year programme; February 1983, a one-year programme and finally a one-year programme in June 1984. A summary of the policies under these arrangements is stated in Ali (1985, 1990) as follows:

> i) Agricultural sector policies that include exchange rate adjustments for exportable produce, elimination of income taxes, cost recovery and pricing systems, physical rehabilitation and institutional reforms of parastatals;
>
> ii) Manufacturing sector policies that include reform of parastatals, rehabilitation, management control and expansion in the sugar sub-sector;
>
> iii) Domestic financial policies that comprise increasing taxes on imports, increasing departmental charges and increasing excise duties on luxuries. Besides, the policies include increasing the prices of sugar, petrol and cement products. In addition, there was an increase in the charges for public duties, a decrease in the credit ceiling and an increase in the interest rate; and
>
> iv) External sector policies that constitute liberalizing foreign trade, creating a market for foreign exchange, and devaluing and rescheduling of debts to Paris Club creditors.

However, since 1986, the relation between the Sudan and the IMF has deteriorated due to the failure of the Sudan to meet its debt obligations to the Organization. In February 1986, the Sudan was declared ineligible for the Organization’s support. By 1990, the Sudan has been considered non-cooperative and since 1993, the voting rights of the Sudan have been suspended. Regardless, the Sudan went further than what is usually required by the Organization from the adjusting countries regarding the implementation of their standard policy prescription. These steps included curtailment of government spending on basic services, liberalization of internal trade, removal of subsidies, devaluation of the currency, raising of taxes, curbing of public employment and liquidation of state manufacturing and other (losing as well as profit-making) public enterprises (Awad 1997).

However, the experience of different countries adopting IMF policies shows the following:

i) A decline in real per capita income. About 70% of African and 83% of Asian countries implementing IMF policies have experienced a decline in their per capita GDP;

ii) A serious rise in unemployment rates particularly in Latin American countries;

iii) Increasing poverty and falling real wages;

iv) Reduction of government spending on social services and food subsidies. For example, expenditure on health decreased by 10% in Malawi and by 40% in the Sudan; in El Salvador and the Dominican Republic by 15% and 40%, respectively;

v) Increasing malnutrition among children particularly in African and Latin American countries;

vi) Stagnant and sometimes falling level of investment; and

vii) Lack of improvement and sometimes deterioration in the current account of the balance of payments (Stewart 1987).

As for the Sudan, there is much evidence that the IMF/WB policies adopted in the country during the period 1978-1984 have led to severe deterioration in the economic performance. This has been exhibited in a decline in annual rate of growth of the GDP, in widening and ever increasing budgetary and balance of payment deficits, in a decline in annual rate of growth of exports and in accumulation of external debts (Ali 1985,1990).

On the other hand, the adoption of macroeconomic reforms in the beginning of the 1990s that uphold the typical features of the IMF/WB Structural Adjustment Programmes has led in addition to its economic impact, which is yet to be investigated, to a significant increase in the proportion of people under the nutritional-based poverty line (Ali 1994; Sahl 1996; Awad 1997).

2.4 Impact of SAPs on the Health Sector

Structural Adjustment Programmes have evident impact on the provision of and demand for curative health services. Regarding the impact on the provision of health services, the effects of SAPs come through the reduction of public spending and the effect on public health priorities towards the provision of free health services. The implication is, therefore, deterioration of resources in the public health sector and shift towards cost recovery mechanisms. On the other hand, SAPs may affect the demand for health services through their impact on wage and pricing policies. These policies may have detrimental effects on factors influencing demand, such as income, price of medical care, price of other commodities and individual preferences (Hassanin 1996).

2.5 Macroeconomic Reforms, SAPs and Health

Although it is widely agreed that the attention to the social dimension of economic adjustment has evolved since 1987 with the publishing of UNICEF's book "*Adjustment with a human face*" by Cornia et al., the authors have written in this issue since the early 1970s. In their work, they state that the first designer of the strategy of Redistribution with Growth (RwG) was H.W. Singer in 1972 when he was chief of the ILO Mission to Kenya. That strategy was proposed for Kenya within the recommendations of the ILO Report, "Employment, Income and Equality".

A detailed proposal for the strategy to be adopted includes different kinds of investments that benefit the poor and give attention to rural areas through allocation of investment quotas. Beside, it was suggested that a minimum standard of nutrition, a minimum standard of housing, access to basic health, clean water and education services be secured for the people.

Much of the literature recording a decline in both health and its outcomes in adjusting countries is published through the UNICEF (Cornia et al. 1987). An in-depth analysis for ten countries was carried out to investigate the complex relationship between economic adjustment, health status and welfare of the vulnerable groups. Some of these countries have not managed to protect the vulnerable groups during the period of adjustment. Sri Lanka and Jamaica are examples of such countries.

Adjustment policies in Sri Lanka were introduced in 1977. Because of the implementation of the policies, expenditure on the social sector fell from 33% in 1977 to 22% of the budget in 1983. Both health and education suffered from shortage of public health institutions. In the health sector, doctors have been permitted to combine public and private practices and as a result, the quality of the service provided has declined. In addition, drug expenditure has increased because of the end of the monopoly of the state pharmaceutical corporation.

In Jamaica, SAPs that were adopted in the 1980s resulted in declining incomes, rising food prices and a significant cut in government spending on social services. Health expenditure per head of the population aged 0-14 declined by 33% and education expenditure by 40%. The expenditure cut has led, in addition to a decline in real income of the staff, to shortage of recurrent inputs and neglect of maintenance of public health institutions. Some hospitals and clinics were downgraded and user charges have been imposed on the consumption of health services.

2.6 The Position of UNICEF and WB on Health Services

The poorest segments of the society are the most exposed to the decline of their basic needs. The mechanism through which this exposition is observed is the family income, a large proportion of which is spent on food, medicine, etc. Thus, any decline in income is expected to threaten not only material progress but also the ability to maintain health and life. In such a situation, the higher risk groups are children. On welfare cutbacks, Cornia et al. 1987 note that social welfare programmes, particularly those for children who are usually not protected by powerful income groups, generally suffer quickly and disproportionately from any cutback in government expenditure devoted to welfare programmes. Based on this type of multiplier effect analysis, the UNICEF's position regarding economic adjustment policies is that they should be undertaken in ways that protect vulnerable groups such as children. This implies the maintenance of basic

services, minimum levels of nutrition, health, education, and an important line of defence of nations (Cornia et al. 1987).

Attention and debate on the negative impact of recession and economic adjustment on welfare of the vulnerable groups, particularly children, has increased after UNICEF's publication of "*The human face of adjustment*". It is argued that adjustment policies are responsible for further deterioration of children's welfare and other vulnerable groups due to: i) the contractionary nature of the adjustment policies which leads to increased poverty by increasing unemployment and decreasing real incomes, and ii) the direct effect of certain macroeconomic policies, such as exchange rate policies and liberalization of trade, on the welfare of the vulnerable groups, which led to negative impact particularly on health and education.

UNICEF holds that in the face of economic stagnation adjustment policies should be designed in ways that protect children, the poor, and the vulnerable. UNICEF's strategy also calls for not sacrificing the vulnerable in the name of economic efficiency and it advocates providing them with basic services, minimum standards of nutrition and household income (Cornia et al.1987).

Thus, UNICEF advocates "*Adjustment with a human face*" as an alternative to the prevailing IMF/WB adjustment approaches. The main components of UNICEF's "*Adjustment with a human face*" are elaborated in Cornia et al. (1987, 290-291) and can be summarized as follows:

> i) Expansionary macroeconomic policies rather than contractionary ones designed to sustain levels of output, investment and human needs over the adjustment period;
>
> ii) Meso-policies designed to reinforce the macro-policies and to secure the priority use of resources to fulfil the needs of the vulnerable groups;
>
> iii) Sectorial policies designed to enhance the productivity of low-income activities and generate employment within the productive sectors with emphasis on small farmers and unorganised industrial producers;
>
> iv) Policies for restructuring government expenditure to improve the efficiency and equity of the social sector by improving the targeting of interventions and by insuring cost effectiveness;
>
> v) Compensatory programmes such as public work employment schemes and nutrition intervention designed to protect the basic health and nutrition of low-income groups during adjustment; and
>
> vi) Monitoring mechanisms designed to assess the human situation with a view to appropriately modify programmes to cater for identified weaknesses.

Despite the significant role played by UNICEF in drawing attention to the social dimension of adjustment through its publications, its recommendations for "protecting the vulnerable" were

considered inadequate, given the scale and duration of the economic crisis. In this regard, Kanji (1992, 22) states the following:

Within adjustment, costs for social reproduction have been further shifted on to women making their burden intolerable, with dire consequences for their own and their children's health. To call for "targeting" women and children implies addressing the needs of approximately 75% of the population is patently absurd use of the word targeting. Small wonder that WB officials have shown irritation at the inability of experts to reduce the "vulnerable population" to targetable proportions.

The World Bank (1993) does not explicitly deny the relationship between the economic environment and health. Indeed, it is actually claimed that since adjustment is implicitly incorporated in the concept of improving the economic environment (policies are not distinguished from outcomes), what affects health is the nature of the government's interventions regarding health. The bulk of the report is devoted to arguing that in developing countries, at least, these policies have been fundamentally misconceived. Funds have been "misallocated" to high cost treatment (such as surgery) and facilities (such as sophisticated public tertiary care hospitals) while the fund allocated to effective interventions such as primary health care is only little, and health budgets and facilities have been inefficiently managed. Those who could provide more efficient health service, notably in the private sector, have meanwhile had their participation restricted. The report argues that the government has a responsibility to provide basic health care, such as the control of contagious diseases, and education, while spending on tertiary health care should be left to the private sector and many essential services can be contracted to profit making health providers. The report also advocates facilitating private sector involvement on health besides improving (as opposed to increasing) government spending on health and fostering a favourable environment for households to improve their health.

According to the report, the answer to the difficulties that face the countries in the provisions of health services is a ratification of health polices. Investment should be concentrated in the most cost-effective interventions, namely, immunization, school-based health services, information and selected services for family planning and nutrition, control of addictive substances and drugs and prevention of HIV/AIDS.

2.7 Debate on Growth and Health

Improvement in income distribution should necessarily be considered because of the negative distributive impact of SAPs, which may not only worsen the living conditions of the population but also threaten their survival. Hence, there should be suggestions for powerful measures to curb the negative effects of SAPs on the lower-income groups, who bear the burden of economic adjustment.

This argument has been supported by two of the writers of the Word Development Report (WDR) (Peng and Hill 1993) who have examined the role of government policies outside the health sector, particularly those affecting economic growth, income distribution, and education on the health status of the people. The authors provide evidence on the relation between the health status of the people and their per capita income and level of education. Throughout the

century, life expectancy and per capita income have been strongly correlated. The higher the per capita income, the more years lived. However, the income effect has more influence on the poor, as additional resources are used by the poor to obtain necessities - particularly food and shelter, which produce significant health benefits.

An important point raised by the authors is that not only high average per capita income is necessary for improving health but also a fair distribution of income. The negative effect of poverty (unequal distribution of wealth) on health can be observed in the differences of health status among rich and poor neighbours and families, even within the same city. For example, in Maduri, India, children aged 2-9 years in the poorest households were found to be more than twice as likely to suffer from serious physical or mental disabilities as children from only marginally better-off families.

Educated people were found to be enjoying better health whether they are children or adults. This is because the educated are usually able to have better choices that improve their health. The authors argue that governments' expenditure on health in adjusting countries has not been negatively affected as elsewhere. Nonetheless, evidence from sub-Saharan African countries and Latin American countries suggests that in the short-run, economic depression associated with adjustment programmes hinders the progress of health services (Peng and Hill1993).

Chinewana and Sanders (1993, 307) contribute to the debate concerned with the decline in health status by arguing that:

Historical and contemporary experience has shown that there is a definite, but complex relationship between economic growth and health status. In general, sustained economic growth over the long run does lead to improvement in health and health status. In the new industrialized countries, the large and sustained decline in mortality was accompanied by a reduction in morbidity (disease) and malnutrition that largely preceded any effective medical intervention. There is, however, no direct correlation between health and nutrition indicators and GDP per capita level, because improved income distribution even at low level can accelerate improvement in health in Sri Lanka and China.

Proponents of the private provision of health services argue that increasing the role of the private sector and charging user fees lead to more competition and greater efficiency (Ivan-Smith 1994).

The community might gain from the expansion of private health institutions, which usually provide a highly sophisticated tertiary health services that might not be available in the public health institutions. Yet, much concern is expressed by some health experts regarding the provision of health services by the private sector.

These experts argue that since most health care seekers are not informed, private health institutions impose unrealistically high charges and provide sub-standard care or unnecessary services. Such practices increase profit for the private health institutions and, therefore, the regulatory role of the government is needed. Moreover, public health services benefit more people than those who are actually utilizing the service. In this respect, treating one person for an infectious disease protects that person and others as well, since there is one less transmitter.

When the full market price is charged fewer people will be treated and the society will benefit less. Furthermore, competition, which is assumed to improve quality and reduce prices for the benefit of the consumer, is usually absent due to the limited number of professionals, particularly in the rural areas. In addition, to get benefit from this competition people need to make an informed choice, and usually this is not the case, particularly in poor countries (Ivan-Smith 1994).

There is a crucial point that must be examined regarding the existence of private health institutions over public ones. An increase in the number of private hospitals and clinics is likely to create unfavourable competition for the limited human resources particularly doctors. This situation has serious implications for the quality of the service provided by public health institutions, and in turn, for their equity and efficiency.

Babiker (1996) has pursued the impact of the economic reforms implemented in the early 1990s on the health sector in the Sudan. He traces the impact of economic liberalization on health using secondary data from the records of the Ministry of Health and the Ministry of Finance by monitoring three categories of indicators: input, process, and outcome. Input indicators consist of per capita GDP, government expenditure, employment inflation and income distribution. Process indicators consist of private health services, curative health resources (health facilities and health personnel), environmental and public health resources, and availability of food and medicines. Outcome indicators consist of patterns of malnutrition and mortality.

Input indicators show that the year that witnessed the highest GDP growth was the year with the lowest actual GDP per capita expenditure on health and, therefore, curtailment of government spending based on resource inadequacy was not justifiable. Other input indicators such as inflation rates, unemployment figures and income distribution, which affect an individual's ability to acquire health services, have also been negatively affected by the liberalization policies. Process indicators that reflect the availability of health services show that curative health care facilities and personnel have been adversely affected by the implementation of liberalization policies. The study has also shown that the significant expansion in the number of private hospitals and clinics associated with the implementation of the liberalization policies has been proved to be contradicting with some aspects of efficiency and equity. Outcome indicators, which are concerned with health and nutrition, have shown that, despite the limitations associated with their use, there was a rise in parasitic, infectious and malnutrition-related diseases during the period of liberalization.

The study has shown the link that exists between macroeconomic variables that are targeted by the economic policies and the health status of the people. The study has also contributed to the debate concerned with the relation between economic growth and the improvement of the health status of the people. In this respect, the study has proved that realizing high rates of economic growth does not always lead to improvement in the provision of and access to health services, by revealing that deterioration in health sectors and health status has been coupled with the realization of high rates of economic growth. In this regard, a political commitment to provide adequate and accessible health services has a vital role in achieving such a goal.

2.8 Determinants of the Demand for Health Services

It has been shown that the negative effects of user fees on demand for health can have dangerous implications for health, and much debate is revolving around this issue. In addition, the success or failure of the user fees system depends largely on its impact on the utilization of health services. For example, revenues generated through user fees depend on the demand for health services, which in turn depend, among others, on the use of the revenues to improve the quality of the services provided by health institutions. In order to discuss the impact of user fees or other financing mechanisms on the demand for health, it is therefore very important to examine different factors that shape the demand for health services.

Demand for health services has its own distinctive characteristics that make it easily affected by different factors together with factors that influence the demand for other commodities. Carrin et al. (1994) discuss the different factors that influence the demand for health services.

Besides the impact of price as a determining factor of the demand for health service, there is the effect of the individual's income. The higher the income of an individual, the higher will be his demand for health services.

Demand for health services is also affected by the prices of substitute services. For example, demand for public health services is affected by the prices of the services provided by other competitors such as private and traditional health institutions.

The cost of complementary goods and services also affects the demand for health; for example, price of drugs and consultation fees. The higher the prices of drugs, the lower will be the utilization of health facilities. Non-price cost of utilizing health services contains other elements of cost that affect the demand for health services, such as cost of time forgone while seeking treatment and transportation costs.

In addition, the quality of the service provided is one of the important factors that affect the demand for health services. This is usually influenced by the individual's perception and other elements such as availability of drugs and qualifications of the health workers. Therefore, improving aspects of quality can have positive impact on the demand for health services.

Moreover, demand for health services is also "created" by the suppliers of health services. For example, financial incentives may induce some doctors to ask certain patients to return to the health unit for extra follow-up visits. The possibility of the induced demand for health services stems from the fact that usually consumers are not aware of the amount of treatment they actually need. Therefore, it is difficult for the ordinary person to prove the incidence of demand creation.

Finally, demand for health services might be affected by other factors such as the individual's education and the availability of information to the patient. The patient's age has been sometimes found to have positive correlation with the utilization of health services, as older people tend to be more exposed to illness. Besides, cultural environment may also influence the level of demand. In some countries, observations reveal that maternal and child health services are much utilized when provided by female practitioners rather than by male ones.

It is essential to note that the different factors that determine an individual's demand for health services are not mutually exclusive, i.e., demand for health services might be sometimes affected by all these factors together or by some of them according to the individual's different social, economic and cultural conditions. The weight given to each of these factors also varies from an individual to another. Furthermore, these factors may interrelate with each other. For example, an individual's perception of the quality of the service as a determinant of the demand for health services is influenced by the socio-economic characteristics of the individual.

2.9 Definition and Basics of Health Insurance

Health insurance is a mechanism that aims at protecting the welfare of individuals who fall seriously ill. By pooling financial contributions from many people, insurance plans can cover the hospital expenses of those experiencing catastrophic events such as injuries. To illustrate this, we can assume that an individual between the ages of 15 and 60 has a 1 in 10,000 chance of experiencing a serious illness, resulting in a $3,000 hospital bill in any one year. If this cost is spread over 10,000 people, then the individual's cost will be (0.0001) X ($3,000) = $0.30. Recognizing this risk reducing fact, most people will be willing to pay more than $0.30 a year for insurance that covers such a big loss, thus transforming the low-probability $3,000 loss into a certain but small $0.30 loss (Shaw and Griffin 1996).

2.10 Implications of Health Insurance on Equity, Efficiency and Consumer Satisfaction

Implementation of health insurance programmes is intended mainly to increase health sector revenues, reduce financial barriers to care, and improve the efficiency of resource allocation and use. Implications of insurance for these aspects are related to and depend critically on the institutional characteristics of the particular programme. Both public and private systems of insurance have their own advantages and disadvantages. Moreover, there is an obvious performance variation within both categories. Regarding equity implication, access to services under insurance programmes is assumed to be subject to need rather than income. However, for countries with a relatively small proportion of the population working in the formal sector, universal coverage is not feasible. Implications of insurance for allocation and efficiency depend on the way in which insurance schemes are organized. Thus, these implications can be assessed with regard to the effect of insurance on the allocation of health resources between different levels and types of care, on the use of referral system, and on the use of particular medical technologies. There is little empirical evidence regarding the implication of insurance for health status and consumer satisfaction. However, the provider payment system used in health insurance creates varying types of incentives for improving health status and consumer satisfaction. It has been evident that fee-for-service reimbursement can lead to an increase in the quantity of the services provided, which often means high levels of consumer satisfaction.

2.11 Health Insurance and Finance of Health Services

Recently, health care financing has become a major concern for policy makers as well as researchers because of the economic difficulties that face many countries, and the economic reforms adopted to control these difficulties weaken their ability to secure the provision of

adequate financial resources for the health services. Accordingly, there has been much debate on the appropriate role for governments and other institutions in financing health services and on how the governments should intervene. Nowadays, there is an increasing tendency towards adopting insurance schemes as a financial mechanism of health care particularly in developing countries because of its potential viability.

Shaw and Griffin (1996) define health insurance as a plan aiming at protecting the welfare of an individual who falls seriously ill. By pooling financial contributions from many people, an individual experiencing catastrophic events can be able to cover the hospital expenses.

Dunlop and Martins (1995) distinguish two types of social insurance programmes. The government with standardized benefit structure and contribution rates handles the first type. Usually this type of insurance plan is financed through a combination of payroll and general taxes. The second type consists of different plans (public and private) that offer the consumer freedom of choice while insurance is still compulsory.

2.12 Problems Facing Health Insurance Plans

Usually various health insurance plans face some inherent problems that should be minimized to ensure the accomplishment of the plan. Shaw and Griffin (1996) discuss these problems and how they can be minimized. The first problem is known as *adverse selection*, which implies that people with high probability of health problems tend to systematically join an insurance plan. However, this problem cannot be found in the health insurance program applied in the Sudan, where insurance plans cover specific target groups on compulsory basis. The second problem is known as *moral hazard.* It implies that many people may take advantage of their membership in the insurance plan by utilizing services more frequently than if they were not members. Forcing consumers of health services to pay for the cost of their care, policing of utilization, keeping premiums high to compensate for such behaviours and limiting benefits may reduce moral hazards. In the Sudanese health insurance plan, consumers pay for part of the cost of treatment (25% of the cost of drugs). The contribution paid by the consumer can reduce the incidence of the problem of moral hazards. The third problem is *cost escalation*. This problem can arise from both the provider and the consumer of the services. Physicians may provide more treatment than required, with no resistance from consumers who have little to lose.

However, the problems discussed above are conventional problems that may face any insurance plan; however, the Sudanese insurance plan is facing additional problems that should be tackled because they may prevent the plan from achieving its ultimate objective. For example, increasing access to health services is a primary objective for implementing the insurance plan, but this objective cannot be achieved unless some new measures are introduced to enable the insurance authorities to increase extended insurance coverage for those not employed in the public sector. Lack of infrastructure as well as its uneven distribution is another obvious restriction imposed on the accessibility of insurance services.

2.13 Contribution of Insurance to Efficiency, Equity and Private Sector Development

Health insurance, especially employer-based schemes, has obvious contribution to efficiency because it can liberate public resources that would otherwise be allocated to expensive curative care. Another advantage of an insurance scheme is its direct equity-enhancing impact; where within the risk pool, benefits are provided based on need rather than on income class. Besides, private provision of curative services will not be developed without insurance because the risk of ruinous expenses faced by individuals will be shifted to the provider when bills are not paid.

Nevertheless, this debate is not inclusive since the contribution of insurance plans in enhancing these aspects depends on various factors such as the design of the insurance package, existing infrastructure and its distribution, and health care system. In this regard, Dunlop and Martin (1995) notice that equal access to health care cannot be achieved in the presence of an insurance scheme unless there is a fair distribution of health facilities and health professionals across regions. The authors also point to another equity consideration in insurance schemes where healthy members subsidize the cost of the less healthy members. However, this advantage may not be apparent in some types of insurance schemes, i.e., employer-based, because individuals who are employed full-time tend to be the healthiest members of the population in contrast to the disabled or the elderly who are not pooled and are thus kept out.

2.14 Framework for Assessing Health Financing Schemes

A framework for assessing health financing strategies has been laid down by Hsiao (1995). He argues that there are three major health policy questions that face developing countries: how to mobilize sufficient funds for health care finance; how to allocate these funds in a way that produces maximum health benefits for the largest number of the population; and how to control the cost of that care. However, around the world, the prominent policy goals for governments are: to provide universal and equal access to reasonable health care, to keep health care affordable, and to make efficient use of resources. Based on this, the performance of different financing systems can be assessed according to six criteria that represent common goals that every nation has set for its health care system: universal coverage, equal access, control of expenditures, efficient use of resources, equity in financing, and consumer choice.

i) Universal Coverage

This is considered as a primary objective for any nation’s health system. However, it has been realized from the experience of affluent countries, such as the United States, that this objective cannot be achieved through a free market alone. Universal coverage can be attained only through some type of compulsory programme. In this regard, the government can use a general tax system or government-run social insurance to cover everyone. The other option is for the government to mandate all citizens to enrol in a public or private insurance plan, and to provide subsidies for the poor and the high-risk groups.

ii) Equal Access

Equal access to health services can be achieved only through an even distribution of health facilities and health professionals across regions. However, availability

of health facilities depends on two factors: capital investments and the payment policy for recurrent cost and for physician services. Both factors are affected by the locus of financial power. In most countries with financing based on self-payment or pluralistic financing, the number of health facilities and personnel can vary significantly between rich and poor communities. Payment policy also affects distribution of health professionals and capital investments – most physicians choose to work in the medical centres located in cities.

iii) Controlling Health Expenditure

The share of health care expenditure by governments and consumers has witnessed a sharp rise during the past few decades. Therefore, both governments and consumers look for ways that enable them to control health expenditure. Some countries choose the supply control option by making health care compete with other programmes for the budgetary funds. Some nations use demand-side strategy; for example, through imposing high rate of cost sharing.

iv) Efficient Use of Resources

Efficiency in resource use depends on three factors: resource allocation, technology diffusion, and administrative efficiency. Resources may be allocated among preventive, primary, and curative health care. There is documentary evidence that preventive and primary health services are more effective when measured by cost-benefit ratios. However, consumers usually show less desire to pay for preventive and primary health services, as the benefit gained from these services might not be felt immediately. The problem associated with the introduction of new technologies in health services is that they are adopted before their benefits are clearly demonstrated. Regarding administrative efficiency, in many countries the administrative efficiency in public institution seems to be less than that of private institutions. However, administrative efficiency varies from one financing mechanism to another but the financing system that provides services indirectly while controlling health expenditures through a global budget seems to be capable of imposing fiscal discipline on the total system.

v) Equity in Financing

Progressivity is an essential equity principle that should be well thought out in any financing system. For compulsory social programmes, the amount that people pay should be proportional to their ability to pay. Another equity consideration in health care financing is risk pooling. General tax financing or public insurance plans pool the risks of all the people in the country. Mandated social insurance plans pool the risk of smaller population groups, such as occupational groups.

vi) Consumer Choice

Consumers make choices regarding three kinds of care providers: primary care physicians, medical specialists, and hospitals. Countries that provide services directly usually allow consumers a choice on primary care physicians but restrict the choice on hospitals and specialists. However, financing plans that provide services indirectly usually give consumers a greater choice.

2.15 Health Insurance in Africa

A survey covering 23 sub-Saharan African countries during the period 1971-1987 shows that only 30% of them had formal health insurance system. Vogel (1990) defines formal insurance as a formal pool of funds, held by a third party, or by the provider in the case of a Health Maintenance Organization. The third party relies on prepayment by its insurees, and draws on this pool of funds to pay for the health care cost of the plan's membership. The third party can be a governmental social security or other public insurance fund.

According to Vogel (1990), the basic characteristics of health insurance plans in sub-Saharan African countries are as follows:

i) Free health care provided and financed for all citizens out of national tax revenues, as in Tanzania;

ii) Health care provided by the government and financed through the general tax and through cost recovery, as in Ghana;

iii) Compulsory Social Security for the entire formal labour market, as in Senegal;

iv) A special health insurance fund for government employees, as in the Sudan;

v) A discount at health care facilities for government employees, as in Ethiopia;

vi) Other public insurance such as those entitling government employees to private medical care as a fringe benefit, as in Kenya;

vii) Mandated employer coverage of health care for employees, as in Zaire.

3. HEALTH CARE FINANCING IN THE SUDAN UNDER MACROECONOMIC REFORM

3.1 Introduction

This section offers a general outlook to the health sector in the Sudan with special emphasis on different financing schemes adopted under the recent macroeconomic reforms. This specifically includes the newly introduced co-payment systems of user charges and health insurance. Firstly, it discusses the main features of the health sector in Sudan with regard to service provision, government expenditure on health and private health services. Then it examines the general features of the Sudanese health insurance scheme.

3.2 The Health Sector in the Sudan: An Overview

The Sudanese health sector was established during the colonial period; since then, it has witnessed successive developments in its size, structure, work force and administration. That developments have been made primarily to enable the health sector to meet the continuous increase in the demand for health services due to the growth of the population and the existence of health threatening factors such as environmental hazards and the spread of communicable diseases.

The government is the main provider of health services in the country through the different health facilities. In addition, Army Medical Services and Police Medical Services also provide public health services, which serve the army and police staff and their families as well as ordinary civilians. Health services are also provided by the private sector through the considerably increasing number of private clinics and hospitals.

Tables 1 and 2 show the number and geographical distribution of some health facilities and personnel in the Sudan. It is obvious that most of the public health facilities, and consequently health cadres, are concentrated in Khartoum. The service distribution reflects largely the structural distortion in the distribution of development efforts between the centre (the state capital) and the rest of the country on one hand and between urban and rural settings on the other. The problem of distribution of health facilities has its own serious implications on the functioning of the health sector, particularly in a vast country such as the Sudan, where the majority of its inhabitants are poor and are living in rural areas and in most cases lack basic needs such as access to safe water.

Table 1. Number and geographical distribution of health care facilities (1996)

States	No. of hospitals	No. of beds	No. of specialists	Blood banks	HC	Dispensaries	Dispensing station	PHCU
Federal institutions	18	3776	13	7	-	-	-	-
Khartoum	18	1266	3	4	83	208	19	24
Gezira	36	2590	1	6	135	241	484	119
W. Nile	14	1103	-	2	43	82	49	199
B. Nile	5	270	-	1	7	36	72	51
Sinnar	13	1022	-	2	25	95	299	-
Nahr Elniel	17	1240	-	2	91	97	89	73

Northern	24	1460	-	3	62	127	61	54
Kassala	10	1095	2	3	37	78	51	125
Gedarif	11	966	-	1	15	57	79	107
Red Sea	7	864	-	1	10	40	11	181
N. Kordofan	13	1214	1	1	25	52	81	430
S. Kordofan	6	531	-	1	14	42	-	279
W. Kordofan	9	633	-	-	18	12	27	261
N. Darfur	8	626	1	1	15	14	4	221
S. Darfur	7	598	-	1	12	-	16	310
Table 1. *Contd.*								
W. Darfur	3	210	1	-	6	2	16	163
Bahr El Gabal	4	648	-	1	13	14	3	16
E. Equatoria	5	188	-	-	13	-	34	47
W. Equatoria	7	354	-	-	-	-	-	-
N. Bahr El Gazal	1	150	-	-	4	10	-	4
W. Bahr El Gazal	2	461	-	1	5	9	-	25
Warab	3	93	-	-	-	-	-	-
Buharyrat	3	250	-	-	-	1453	-	-
Upper Nile	9	662	1	1	11	-	-	17
El Wahda	4	131	-	-	13	-	17	-
Gongali	4	200	-	-	10	-	-	-
The Sudan	261	22601	23	39	667	-	1412	2706

SOURCE: Health Information Centre, FMOH.

Table 2. Number and geographical distribution of selected health care personnel geographical distribution (1996)

States	Speci-alists	Registrars	General Physicians	Dentists	Housemen	Pharmacists
Federal institutions	298	180	302	83	600	168
Khartoum	41	6	158	41	-	20
Gezira	71	22	105	13	-	46
W. Nile	21	-	42	3	-	8
B. Nile	6	-	16	2	-	5
Sinnar	13	-	29	4	-	7

Nahr El Niel	13	-	29	10	-	12
Northern	15	-	28	3	-	3
Kassala	211	-	29	6	-	5
Gedarif	19	-	34	3	-	5
Red Sea	24	-	43	11	-	7
N. Kordofan	22	2	37	7	-	11
S. Kordofan	5	-	12	1	-	3
W. Kordofan	4	-	15	-	-	5
N. Darfur	9	-	24	2	-	3
S. Darfur	12	-	15	3	-	8
W. Darfur	2	-	7	1	-	5
Bahr El Gazal	-	-	13	-	-	1
E. Equatoria	-	-	-	-	-	-
W. Equatoria	-	-	-	-	-	-
N. Bahr El Gazal	-	-	2	-	-	-
W. Baher El Gazal	-	-	4	-	-	4
Warab	-	-	-	-	-	-
Buharyrat	-	-	-	-	-	-
Upper Nile	-	-	6	-	-	-
El Wahda	-	-	3	-	-	-
Gongali	-	-	-	-	-	-
The Sudan	605	210	953	193	600	322

SOURCE: Health Information Centre, FMOH.

Another important characteristic of the health sector of the Sudan as indicated by the conventional quantitative indicators is the poor situation of health facilities, health work force, logistical capabilities, medicine and medical equipment. Moreover, despite the impressive expansion in health care facilities in the peripheries, the health facilities are still inadequate to meet the increasing needs of the population. For instance, there is only one hospital for 111,000 people and less than one hospital bed for 1,000 people. There is only one health centre for 50,000 people, one dispensary and one dressing station for 20,000 people and one primary health unit for 8,400 people. The primary health care approach has been adopted since the late 1990s. The objective of applying that approach was to provide wider health coverage through the

deployment of community health works. Accordingly, an estimated 70% of the population have access to health services, though this ratio decreases to less than 50% in dispersed rural areas (UNFPA 1990).

3.3 Trends in Government Expenditure under SAPs

Because of resource limitations and bad economic performance, the health sector has suffered from scarcity of financial resources. The situation has become even worse after the implementation of the recent structural macroeconomic reforms known as “liberalization policies” in 1992 where public expenditure on health witnessed a declining trend. This condition is a reflection of the government’s withdrawal from the provision of basic services.

However, reduction of government spending on health was one of the measures implemented in the context of the standard IMF/WB prescription aiming at restoring the internal balance through removal of subsidies and curbing of public spending on social services. In spite of the difficulties associated with an attempt to measure the actual government spending on health, Babiker (1996) managed to trace the trends in government spending during the period 1986/87 to 1993/94 (table 3).

According to Babiker (1996), actual per capita government spending on health has been significantly reduced from Ls 1.4 in 1986/87 to Ls 0.24 in 1993/94 although per capita GDP level realized in 1993/94 was 21.1% more than that of 1986/87. This shows that the reason for the decline in the government’s spending on health services must have been due to liberalization. Moreover, the health sector had to compete for finance with other items that have political priorities such as expansion of higher education, adoption of the federal system and militarization. It is now evident that reduction of government allocation to the health sector, already suffering from many difficulties, has caused a direct deprivation of the health sector from its limited resources and a decline of its standards and an increase in the cost of health care.

Table 3. GDP growth, actual health expenditure, and per capita government expenditure on health (1986/87- 1993/94)

Year	GDP in million	% change	Actual govt. spending	Per capita expenditure	% change
86/87	6369	-	32887	1.40	-
87/88	6275	1.5	199933	0.80	-42.9
88/89	6629	5.6	21566	0.90	12.5
89/90	6665	0.3	17929	0.70	-22.2
90/91	6686	0.4	12264	0.50	-88.2
91/92	7447	11.3	11726	0.40	-25.0
92/93	8364	12.3	4407	0.17	-57.5
93/94	8891	6.3	678	0.24	-42.2

SOURCE: Babiker, 1996.

3.4 Health Care Financing Schemes under SAPs

Before the implementation of the recent reforms of 1992, health services were financed from the general budget. Therefore, except for some minor fees, health services were provided free of change. Finance for drugs was from the tax system. Therefore, the bulk of the financial resource to the health services was provided by the government. Besides, external aid was also representing a vital element of finance for the health sector through provision of different types of drugs, equipment, and infrastructural facilities. Unfortunately, precise data on the size of foreign aid are not available, but recently, this type of aid has become very limited in line with the declining trend of the overall flow of foreign aid.

3.5 User Charge Financing Scheme

To compensate for the cutback in government spending on health, in 1990 the government introduced a new co-payment system based on user charges.

In fact, the introduction of user charges began first by the development of the prevailing system at that time, which was some sort of voluntary payment "self-help system". The following measures were implemented in the context of the programme:

i) The development of different channels of revenues from "self help system" by increasing fees and coverage;

ii) Expenditure rationalization from revenues collected and restriction of spending on specific items; and

iii) A printing unit was established to produce tickets needed for revenue collection from the self-help system.

After that and in 1992, the programme of "Economical Treatment" was introduced in some health centres in Khartoum State with the objective of creating new channels of revenue for financing health services. The main feature of that programme was that users of health facilities should pay charges for all services provided. The fees imposed were higher than those imposed in the public health hospitals but less than the prevailing fees in the private clinics.

However, a few years after the adoption of the user fees system, it was apparent that only a limited success was achieved. The main factor that hindered the performance of the new financing mechanism was the adverse economic environment generated by SAPs. Curtailment of government support to the health sector negatively affected the quality of services provided and the work environment, which contributed to the dissatisfaction of the medical staff. Adverse impact on the real incomes of the population caused by SAPs and the introduction of fees led to reduced accessibility to health services for the growing number of the poor people.

Therefore, financial resources generated from the fees system were inadequate to maintain health institutions, and that led to severe deterioration in the quality of the services provided and to the collapse of the cross-subsidization mechanism that was assumed to guarantee the sustainability and affordability of the health services. Moreover, the increasing role of the private sector in the provision of health services created unfavourable competition for the scarce financial and human resources and led to negative effects on the publicly provided health services (Elias 1999).

3.6 Private Health Services

Curative health services provided by the private sector witnessed a significant increase during the last decade and particularly after the implementation of the major macroeconomic reforms and the related sectoral reforms. Table 4 shows the growth in the number of private hospitals and clinics inside Khartoum State. The number of private clinics has increased successively during the last three years until it reached 1421 clinics, of which 959 are specialized clinics and the remaining are general clinics. The number of private hospitals in 1996 has exceeded that of 1986 by 63%.

Table 4. Number of private hospitals and clinics in Khartoum State (1985-1996)

Year	No. of private hospitals	% change	No. of private clinics	% change
1985	9	-	-	-
1986	10	11.1	-	-
1987	10	0.0	-	-
1988	12	20.0	362	-
1989	16	33.3	485	34.0
1990	16	0.0	524	8.0
1991	22	37.5	595	13.5
1992	27	22.7	631	6.1
1993	32	18.5	608	-3.6
1994	40	25.0	862	41.8
1995	43	7.5	1042	20.9
1996	63	46.5	1421	36.4

SOURCE: Updated from table 7 in Babiker, 1996.

Many factors led to the expansion of the private health services after the implementation of the liberalization policies. One such factor was the perceived deterioration of the quality of services provided by the public health institutions because of the cutback in government expenditure on health. In addition, the introduction of charges on the publicly provided health services made the ratio of quality/cost in favour of the private services as the difference in cost was outweighed by

the perceived high quality of the service provided by the private sector. Moreover, the continuous decline of the real income of health personnel, like other government employees, induced them to shift to private practice where they could find better rewards (Babiker 1996). Another factor that contributed to the expansion of private health facilities was the increasing demand for their services caused by the fact that treatment at private hospitals took some social dimensions, as people consider this a measure of the degree of care revealed by family members towards their sick relatives.

The significant growth of the private health institutions has ultimately led to qualitative and quantitative improvement in the provision of curative health services, despite the fact that the whole expansion in the privately provided health services has been concentrated in the provision of tertiary curative health services, which have relatively small incidence and high cost. Such expansion does not go in line with the national interest that seeks the provision of population-based health services that can lead to effectual improvement in the health status of the majority of the population.

Moreover, about a third of the specialist doctors are engaged full time in private practice; according to the statistics of the FMOH, the number of specialists working in the public health institutions in the Sudan in 1995 was only 609. Although some of those specialists have retired and some of them are still under their probation period, these figures indicate that there is a serious outflow from service in the public health institutions.

The shift of doctors from work in public health institutions to private ones has its negative implications on the quality and adequacy of the services provided by those institutions. This situation has its negative impact on the consumers of health services in general and the poor in particular. Expansion in the private medical services usually comes at the expense of the public sector, which is assumed to provide affordable, accessible and effective population-based services that target all segments of the population. However, the services provided by the private hospitals and clinics are too expensive for the majority of the population. In the presence of user fees, people are forced to seek treatment in private health facilities because of the perceived and measured deterioration in the quality of the services provided by public health institutions caused by the cutback in government spending and the departure of medical personnel from these institutions. The absence of a competent regulatory role of the government, and health service consumers not being well informed about rates and care standards allows for a wide scope of unrealistically high charges, sub-standard care or the provision of unnecessary services. In addition, usually doctors who engage in private practice tend to induce demand for private services as they can find better rewards from private practice besides the favourable work conditions that they enjoy in those private clinics and hospitals. Under such a situation, the poor are often excluded from both private and public services.

3.7 The Insurance Plan

The Law of the Health Insurance was issued in 1999 and accordingly it brought to an end the Health Insurance Public Corporation Act of 1994. The 1999 Act gave all States of the Sudan a wide range of authority based on the constitutional principles that allow states to share health

authorities with the centre. The Act also asserted that health insurance is mandatory for all citizens.

3.7.1 Objectives of the Health Insurance Plan

The health insurance project was introduced to enable health authorities to realize the following objectives:

i) To promote the medical services provided in the Sudan;

ii) To reduce the financial burden of publicly provided health services;

iii) To achieve equity in service provision for all segments of the population; and

iv) To rehabilitate the existing health care institutions.

3.7.2 Sources of Finance for the Insurance Plan

The sources of finance for health insurance as set by the Health Insurance Public Corporation Act of 1994 are as follows:

i) The contributions paid by the employees and employers, which amount to 10% of the employee's salary;

ii) Fees paid by the corporations;

iii) Revenues generated through investments done by the corporation's funds; and

iv) Financial resources provided by the State for the Insurance Corporation.

3.7.3 Administration of the Project

According to the Health Insurance Public Act of 1994, the Corporation was established as independent and incorporated. It is assigned to manage a national health insurance system in the Sudan. The corporation has a board of directors, comprising representatives of the government, employees and employers. It is supervised by the Federal Minister of Health.

3.7.4 Subscription in the Insurance Plan and Coverage

Subscription is done through firms and units where the firm or corporation fills out an application for registration, forms are distributed to all members in the firm and according to this form, the insurance corporation issues membership cards to each of the members of the subscriber's family. They also specify the health unit in which he receives the service.

The percentage of population covered by the insurance services is about 5% of the total population. It is apparent that this proportion is very small and it indicates that a large number of the population is outside the insurance umbrella. Moreover, as table 5 shows the percentage of population covered varies from one State to another. For instance, Khartoum State has the largest number of population covered by insurance services (14%) while a scanty proportion of 0.05% is covered in S. Kordufan State. This situation further asserts the problem of uneven distribution of the health infrastructure and development effort.

Table 5. Number and percentage of insurance cards to number of people

in different states adopting health insurance (1998)

State	Population	No. of cards	Percentage
Sinnar	978000	38267	3.90
Khartoum	3313000	493863	14.90
Gezira	2716000	137200	5.10
Ghadarif	1149000	80051	7.00
Red Sea	685000	14533	2.10
Nahr El Niel	781000	11250	1.40
White Nile	1227000	34128	2.80
N. Darfur	1156000	42721	3.70
W. Kordufan	992000	25000	2.50
Blue Nile	513000	5608	1.10
W. Darfur	1330000	1996	0.20
N. Kordufan	1327000	17350	1.30
Northern	511000	18358	3.60
Kassala	1235000	38349	3.10
S. Kordufan	1004000	481	0.05
Total	18917000	960250	5.00

SOURCE: National Health Insurance Public Corporation 1999.

3.7.5 Categories Covered by the Act

According to the Act of 1994, Health Insurance Public Corporations shall compulsorily cover the following categories:

i) All workers of the government states, local government units, corporations, the private sector and mixed sector and pensioners.

ii) Any other categories specified by the Council of Ministers (the Minister of Health).

3.7.6 The Premium

Subscription fees for salary recipients in public and private sectors are 10% of the gross salary, 4% is to be taken from the employer and 6% is to be paid by the employee. As for the other categories such as students, poor families and pensioners, subscription is conducted in collaboration with entities and organizations responsible for these groups.

3.7.7 Service Provision under the Insurance Programme

Under the insurance scheme, services are provided at three levels. At the first level, patients are examined by unspecialised physicians and they receive preliminary diagnostic services. At the second level, patients are examined by specialist doctors and they get sophisticated diagnostic services such as ultra sound and Computerized Topographic Scanning (CTS). The third level of service includes the provision of specialists' examination, diagnostic services and admission for inpatient services at the hospitals.

4. Health Insurance and Health Service Consumers

4.1 Introduction

This section examines the impact of health insurance financing mechanisms on the consumers of curative health services in Khartoum State. It is evident that the introduction of new financing mechanisms would lead to far reaching effects on the consumption of health services and particularly on the health seeking behaviour of people. To reflect the impact of insurance on different aspects of health service utilization, we look into different socio-economic factors that shape health seeking behaviour of both insured and uninsured respondents to reflect the variations that might be caused by the adoption of the insurance plan.

4.2 Socio-economic Characteristics of the Respondents

Table 6 shows the basic socio-economic characteristics of the respondents. Accordingly, no significant difference is observed between the insured and uninsured respondents with regard to sex, age, marital status and income, while slight difference may be noticed in the educational attainment in favour of the insured respondents. The largest difference is observed regarding

current occupation. Most of the insured respondents are government employees while a significant proportion of the uninsured respondents are engaged in the private sector.

Regarding the sex composition of the respondents, the majority of the households are male-headed. However, the age of the respondents is normally distributed with the younger and older respondents representing a small proportion, and the middle-aged respondents representing the bigger proportion. The majority of the insured respondents have attained secondary or higher levels of education. This may be because work in the formal sector usually requires a minimum educational qualification.

Table 6. Basic socio-economic characteristics of the respondents

Characteristics	Insured (N=210) %	Uninsured (N=131) %
Sex		
Male	89.0	93.1
Female	11.0	6.9
Age		
21-30	1.9	6.9
31-40	19.0	37.4
Table 6. *Contd.*		
41-50	27.1	22.1
51-60	20.0	19.1
61-70	24.3	11.5
71 and above	7.6	3.1
Education		
Illiterate	6.2	16.0
Primary + Intermediate	35.2	40.4
Secondary	34.8	27.5
University + Postgraduate	23.8	16.0
Marital status		
Single	6.7	1.5
Married	84.3	93.1
Widowed	6.7	5.3
Divorced	2.6	0.0
Occupation		

Worker	6.7	14.5
Govt. Employee	30.5	11.5
Freelance	12.9	42.8
Professional	12.9	6.1
Housewife	7.1	6.1
Retired	27.1	13.0
Other	2.9	6.1
Total monthly income (Ls.)		
Less than 100,000	29.0	30.5
101,000 - 200,000	30.5	30.5
201,000 - 300,000	14.8	16.8
301,000 - 400,000	6.7	6.9
401,000 - 500,000	3.3	3.8
501,000 - 600,000	4.8	0.8
More than 600,000	11.0	10.7

The total monthly income of both categories varies but the majority (about 60%) of the respondents have a monthly income equivalent to Ls. 200,000 or less. This indicates that a significant proportion of the respondents are with very limited income. Income limitation represents a real barrier for access to basic services particularly health.

4.3 Health Seeking Behaviour of Respondents

Health seeking behaviour regarding response to illness by seeking any of the different types of treatment depends on many factors, such as socio-economic background. The individual or his/her relatives who choose the treatment option usually face the following alternatives: (i) to seek different levels of medical treatment at private or public health facilities; (ii) to seek non medical treatment with a traditional practitioner; (iii) to resort to self treatment using either modern medicines or traditional ones; and (iv) to leave the illness untreated.

The majority of the respondents revealed their preference to medical treatment as indicated in table 7. This type of response may reflect a positive sign regarding methods of treatment that they might choose. It also reflects a high degree of awareness about the effectiveness of medical treatment. However, this may not always be the actual behaviour in case of illness.

Table 7. Respondents' preference of type of treatment

Treatment type	Insured (%)	Uninsured (%)
Medical treatment	95.7	93.1
Self-treatment	1.0	3.8

Traditional treatment	3.4	3.1
Total	100.0	100.0

Table 8 shows that about two-thirds of the respondents practiced one form or another of self-treatment such as the use of herbs, which is the most widely used method (table 9).

Table 8. Prevalence of self-treatment practices among respondents

Prevalence of self-treatment	Insured (%)	Uninsured (%)
Practice self treatment	72.9	70.2
Do not practice	27.1	29.8
Total	100.0	100.0

Table 9. Methods used in self-treatment

Method of self-treatment	Insured (%)	Uninsured (%)
Feeding programme	9.2	13.2
Herbs	64.5	61.5
Medicines	22.4	20.9
Others	3.9	4.4
Total	100.0	100.0

Wide use of self-treatment methods is evident within a large segment of the population and it can be attributed to the high and ever increasing cost of medical treatment accompanied by the deteriorating standards of living. Furthermore, the perceived and measured deterioration in the quality of medical services available may have substantial contribution to the existence and increase of this phenomenon. Self-treatment is hazardous as it may lead to further health complications that may become difficult to deal with. Furthermore, existence of self-treatment by taking drugs reflects the absence of regulations that prevent such risky behaviour.

4.4 Aspects of Medical Service Utilization under the Insurance Scheme: Public Health Services

It has been suggested by theories of insurance that insured persons tend to use more services than the uninsured ones due to both adverse selection and moral hazard and hence one may argue that insurance has positive impact on utilization of health services. However, this phenomenon could

hinder the performance of insurance schemes. Therefore, there is a need to benefit from this advantage while curtailing unnecessary use of insurance services.

The methods of health service financing adopted have great influence on the utilization of health services. For instance, documentary evidence is available on the negative effect of user charges on the demand for health services in the Sudan and other countries as well. In this regard, perception of the quality of services has obvious effect on the demand for those services.

Socio-economic background of the individual is the main factor that shapes and affects his/her perception of the quality of the service. The newly introduced insurance system can affect utilization of health services through its contribution to affordability of the services and to quality improvement. The concept of quality is a normative one and it differs from one person to another and, therefore, it is very difficult to find a unified measurement for quality. However, certain criteria can serve as good measurements for the quality of services, such as availability of drugs and medical cadres in the health facility. Table 10 shows availability of physicians in the health centres visited by respondents. Accordingly, the insured respondents are in a better position because more than 95% of them find physicians in the health centres they are visiting.

Table 10. Availability of physicians in the health centres visited

Availability of physicians	Insured (%)	Uninsured (%)
Available	95.1	73.1
Not available	4.9	26.9
Total	100.0	100.0

Regarding the availability of medicines in the health facilities, table 11 shows that about 60% of the respondents in each category find few or none of the prescribed medicines in the facility. This may act as an unfavourable indicator regarding the quality of the services provided and may question the viability of the insurance scheme.

Table 11. Availability of medicines prescribed in the hospitals

Availability of medicines	Insured (%)	Uninsured (%)
All medicines are available	16.9	20.9
Many medicines are available	20.6	18.6
Few medicines are available	45.6	41.9
Nothing is found	16.9	18.6

Total	100.0	100.0

The availability of different types of medical examinations and diagnostic services has also been examined within the respondents. Tables 12, 13 and 14 show that laboratory tests, X-ray and other examination services are, to some extent, available in the health facilities with slight difference in favour of insurance health facilities.

Table 12. Availability of laboratory tests and X-ray services

in the hospitals

Availability	Insured (%)	Uninsured (%)
Available	85.3	80.6
Not available	14.7	19.4
Total	100.0	100.0

Table 13. Availability of different types of services in the hospitals

Availability of services	Insured (%)	Uninsured (%)
All services are available	80.7	84.9
Not all services are available	19.3	25.1
Total	100.0	100.0

Table 14. Availability of all diagnostic services provided in the hospitals

Availability of diagnostic services	Insured (%)	Uninsured (%)
Services are available	66.9	64.0
Services are not available	33.0	36.0
Total	100.0	100.0

On the other hand, opinions of respondents about staff qualifications and degree of carefulness that they reveal towards patients has considerable weight in the evaluation matrix of the consumers of health services. Tables 15 and 16 provide a summary of these opinions. Most of the respondents believe that the cadres in the health institutions are adequately qualified but regarding treatment, surprisingly, the uninsured respondents reflect a higher degree of careful

treatment. This may be attributed to the fact that insurance facilities are very crowded and over utilized, which may affect the time and attention devoted to the visitor of these facilities.

Table 15. Opinions of respondents visiting public hospitals on health cadres' qualifications

Opinions on health cadres' qualifications	Insured (%)	Uninsured (%)
Well qualified	72.5	77.9
Not adequately qualified	21.9	17.4
Do not know	5.6	4.7
Total	100.0	100.0

Table 16. Opinion of respondents visiting public hospitals on staff treatment

Opinions on staff treatment	Insured (%)	Uninsured (%)
Careful treatment	69.4	79.1
Careless treatment	28.1	18.6
Others	2.5	2.3
Total	100.0	100.0

Opinions of the respondents about the quality of publicly provided health services that summarize their overall evaluation of the services they receive are shown in table 17. It is apparent that no significant difference exists between the opinions of the insured and uninsured respondents regarding the quality of the services. This may be viewed in another way by arguing that the services that are provided under the insurance scheme have not led to noticeable improvement in the quality of the services.

Table 17. Opinions on quality of services provided in the health centres

Opinions on the quality of services	Insured (%)	Uninsured (%)
Good quality	70.6	73.1
Bad quality	29.4	26.9
Total	100.0	100.0

4.5 Access to Health Services

The issue of accessibility is very essential in service utilization. Accessibility is divided into two parts: geographical and financial. Geographical accessibility, expressed in terms of distance to facility, is also associated with cost of treatment. The justification is that as a health facility becomes distant from the place of residence, it raises the cost of transportation and consumes more time and effort and hence it increases the opportunity cost of time that would otherwise be used productively. This fact is clearly exhibited in the justifications stated by the respondents when they were asked about the reasons that led them to seek treatment at a specific hospital. Geographical nearness to a health facility is the most prominent factor that affects selection of a health facility, as table 18 shows, particularly for insured respondents. However, more than 70% of the insured respondents have been attached to a health facility based on the nearness of their residence to the facility location and 23% according to the nearness to their work place (table 19). This method contributes to efficient use of resources as it reduces transportation and time costs.

Table 18. Reasons for seeking treatment at specific public hospitals

	Insured (%)	Uninsured (%)
Nearness	72.5	60.5
Good services	6.9	16.3
Referred to other institution	5.0	11.6
Reasonable cost	1.9	2.3
Several reasons	7.4	2.3
Others	6.3	7.0
Total	100.0	100.0

Table 19. Reasons for attachment of insured persons to a specific insurance health facility

Reason for choice of facility	No.	%
According to residences	152	72.3
According to work place	46	21.9

According to insured choice	7	3.3
Others	5	2.4
Total	210	100.0

Accessibility to health services under an insurance scheme could be examined with regard to coverage of members. About 63% of insured respondents asserted that insurance services cover all of their family members (table 20). This fact may question the contribution of insurance scheme to accessibility promotion because a significant proportion of insurance subscribers could be considered not adequately covered by insurance services as their family members are excluded.

Table 20. Family members covered by insurance services

Insurance covered	No.	%
All members	133	63.3
Some members	77	36.7
Total	210	100.0

The package of services provided under an insurance scheme also affects accessibility to health services. Table 21 shows that only 40% of respondents believe that they acquire all types of the treatment they need. About 33% of insured respondents argued that they receive a package of health services according to the range of services available in the specified facility.

Table 21. Type of treatments covered by health insurance

Type of treatment	No.	%
All types	85	40.5
All types except surgical	22	10.5
According to available services	65	31.0
Others	38	18.0
Total	210	100.0

4.6 Utilization of Private Health Services

Respondents from both categories utilize private health insurance (table 22). Moreover, no significant difference exists between the insured and uninsured respondents regarding the reason behind seeking treatment at private health institutions (table 23). The justification for this situation is that the growing number of private health institutions have created a competition in the limited financial and human resources in favour of private facilities where health cadres could find better working conditions and financial incentives (Elias 1999).

Table 22. Utilization of private health services by respondents

Utilization	Insured (%)	Uninsured (%)
Utilize	61.4	55.0
Do not utilize	38.6	45.0
Total	100.0	100.0

Table 23. Reasons for preferring treatment at private health facilities

Reasons	Insured (%)	Uninsured (%)
Good care	52.0	52.9
Good cadres	18.0	20.0
Deteriorating public services	2.4	10.0
Several reasons	19.8	10.0
Others	7.8	7.1
Total	100.0	100.0

People perceive private health services to be of better quality compared to the public ones. However, the proportion of those who selected private facilities due to the deterioration in the quality of the public services is higher among the uninsured respondents. This may indicate that insured respondents do not perceive the quality of the public health services as deteriorating.

4.7 Advantages of Health Insurance Schemes

The advantages of health insurance schemes are summarized in table 24. Reasonable cost of medical treatment has been viewed as the most prominent advantage of the insurance scheme. Therefore, it could be argued that insurance has contributed in a constructive manner to the reduction of treatment cost and hence to the enhancement of the accessibility to the services.

Table 24. Advantages of health insurance

Advantage	Insured (%)	Uninsured (%)

Reasonable cost	57.6	57.6
Good quality services	7.6	7.6
Service sustainability	24.8	24.8
Others	10.0	10.0
Total	100.0	100.0

The other remarkable advantage of an insurance scheme is its contribution to the sustainability of service provision. For instance, financial sustainability is a very critical issue for any financing mechanism. It has been made clear that the insurance plan has succeeded in mobilizing a considerable amount of financial resources through premiums and other sources of funding. In fact, the financial sustainability of an insurance scheme stems from the sustainability of premium sources.

A small proportion of the respondents revealed that insurance has contributed to the improvement of the services. This may indicate that attraction to insurance services is stimulated by low cost rather than by quality improvement, which is more essential.

4.8 Shortcomings of Insurance Schemes

The majority of respondents (about 42%) have complained about crowded health facilities (table 25). This situation has a negative implication on the quality of the services provided as it prolongs the waiting time for treatment and affects the degree of carefulness the patient might find from the medical cadres in the facility. On the other hand, this situation may represent a positive sign regarding service utilization, but this point should be carefully considered by comparing the number of health facilities providing insurance services to the number of insured persons. In other words, crowded health facilities may indicate inadequacy of their number to serve the large number of beneficiaries.

Restrictive coverage of an insurance plan has been mentioned as one of the negative aspects of the plan. Restrictive coverage refers to the package of excludable services such as treatment of some diseases and the provision of some drugs such as vitamins. A considerable number of diabetic individuals have expressed their concerns regarding restrictions imposed on the provision of vitamins though they represent a crucial component of their medication.

Table 25. Shortcomings of the insurance plan

Shortcomings	Insured (%)	Uninsured (%)
Crowded facilities	42.3	42.3
Unavailability of drugs	12.9	12.9

Restrictive coverage	17.6	17.6
Others	15.7	15.7
No shortcomings	11.5	11.5
Total	100.0	100.0

5. SUMMARY OF FINDINGS AND RECOMMENDATIONS

5.1 Background

The study aims at investigating different aspects associated with the adoption of health insurance as financing mechanism for curative health services in the Sudan. Specifically, the study aims at examining the general features of the insurance plan and its likely impact on utilization, access, efficiency, and quality of the services provided under the insurance scheme. The study also attempts to examine the potentialities and limitations of the scheme.

The study was conducted in Khartoum State, which is a pioneering State in adopting the insurance plan. Moreover, most of the health care facilities are concentrated in Khartoum. Both primary and secondary sources of data have been used in the study. Secondary documented data were obtained from published and unpublished literature related to the topic. Primary data were collected through a household survey conducted in three residential areas. The total sample size, randomly selected, is 341 households of whom 210 are insured and 131 are uninsured. Besides, interviews were also conducted with some officials in the National Health Insurance Programme.

5.2 Findings

One of the main findings of the study is that the insurance scheme has contributed to overcoming many shortcomings associated with the application of the user charges financing scheme. In this regard, the insurance scheme has succeeded in mobilizing a large number of financial resources to the health sector. Lack of financial resources has been a persisting problem facing the health sector in the Sudan particularly after the cutback in government spending on health and the limited success of user charge system to secure a sufficient amount of financial resources.

The insurance scheme has also made a notable contribution to the enhancement of access to health services by making curative health services more affordable through reducing cost of treatment. However, no significant improvement has been reported regarding the quality of the services provided under the insurance scheme.

The conventional difficulties that face any insurance schemes are controlled, to some extent, in the Sudanese National Health Insurance Programme. For instance, the imposition of co-payment system has reduced moral hazards problem. In addition, adverse selection has been curbed by the compulsory nature of coverage, which extends coverage to specific target groups.

The most prominent contribution to the improvement of efficiency prompted by the adoption of the insurance scheme is achieved through the strengthening of the referral system. Activation of the referral system has significantly contributed to the rationalization of resource use. Another aspect of efficiency in the insurance plan is that insured persons are attached to health facilities according to nearness to their residence.

The health insurance programme has positive implications on the utilization of public health services. It is well known that an insured person tends to over utilize the provided health services due to moral hazards problem, but crowded health facilities may indicate inadequacy of the available health facilities. Moreover, this situation has negative implications on the quality of the services provided.

Equity implications of insurance are obvious as services are provided based on need rather than ability to pay. However, contribution of the Sudanese National Health Insurance Programme remains questionable as long as insurance coverage is still restricted to specific target groups.

5.3 Recommendations

The study recommends expanding the insurance coverage to include all segments of the population regardless of their activities or geographical distribution. This will help to extend the benefits of the insurance system to the general populace and hence to contribute to equity in service delivery.

Another important recommendation is that more financial resources should be injected from the public budget into the health sector with the objective of improving the situation of the available infrastructure and increasing its size. Overloaded insurance facilities may indicate that the number of health facilities is too limited to meet the growing number of the insured.

There is also an urgent need to take further measures to control the negative effects of the insurance scheme such as adverse selection and moral hazards. In addition, the use of resources, particularly financial ones, which accounts for a large proportion of the financial resources, should be rationalized by reducing the administrative cost.

The quality of the services provided should be enhanced to make the insured feel the difference under the insurance scheme and to attract other potential subscribers. This objective could be achieved only by allocating a considerable amount of financial resources for service

improvement. Emphasis should be placed on the supply of drugs and equipment as their impact on perception of quality is proved.

Incentives provided for the staff should also be improved to attract qualified cadres particularly from the private sector, which has persisted to draining the scarce human resources of the public health sector.

The study urges that further research be conducted on the administrative set up of insurance and its impact on the performance of the insurance plan.

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