

CHAPTER 2

HEALTH CARE SYSTEM IN CAMBODIA



2.1 Geo-demography and Economy

Cambodia is an agrarian country. It is bounded by Thailand to the west, Laos and Thailand to the north, the Gulf of Thailand to the south, and Vietnam to the east. It has a total land area of 181,035 square kilometers. The maximum extent of the country from the east to the west is approximately 580 kilometers and it extends 450 kilometers from the north to the south.

The population census in 1998 recorded the number of the people in the country at 11,437,656 with an annual growth rate of 2.5 percent (National Institute of Statistics, 1999). The 1998 census showed that 51.8 percent of the population was female and 48.2 percent was male. The percentage of the population age 0-14 was 42.8 percent, with 53.7 percent age 15-64.

In Cambodia, 84 percent of the population lives in rural areas whereas 16 percent lives in urban areas. The population density in the country as a whole is 64 per square kilometer. According to the 1998 census, about one million inhabitants (999,809) live in Phnom Penh, the capital city. The average household size of a Cambodian family is 5.4.

Since 1991 Paris Peace Accord (PPA), Cambodia's economy has made remarkable progress after more than two decades of political unrest (Ministry of Planning, 1999). However, Cambodia still remains as one of the poorest and least developed countries in Asia, with the gross domestic product (GDP) per capita estimated at approximately US\$238 in 2000. The government expenditure on health is US\$1.00 per capita in 2000.

2.2 Health Sector Reform (HSR)

The main objective of the Ministry of Health's (MoH) HSR is to *“improve and extend primary health care (PHC) through the implementation of a district-based health system”* (MoH Master Plan, 1994-1996). Reform of the health sector entails important transformations, both financial, and organizational, such as:

- Rational distribution of resources based on the health coverage plan (HCP): financial, infrastructure, drugs, human resources and equipment.

- Reorganization of the MoH institutional framework at central, provincial, and district levels.
- Budgetary reform
- A new definition of the health system and the types of services expected at each level of the system (see Figure 2.1).
- Redistribution and retraining of health staff.
- Introduction of new ways to finance health services.

The reform aimed to meet the people's essential demand for health care by:

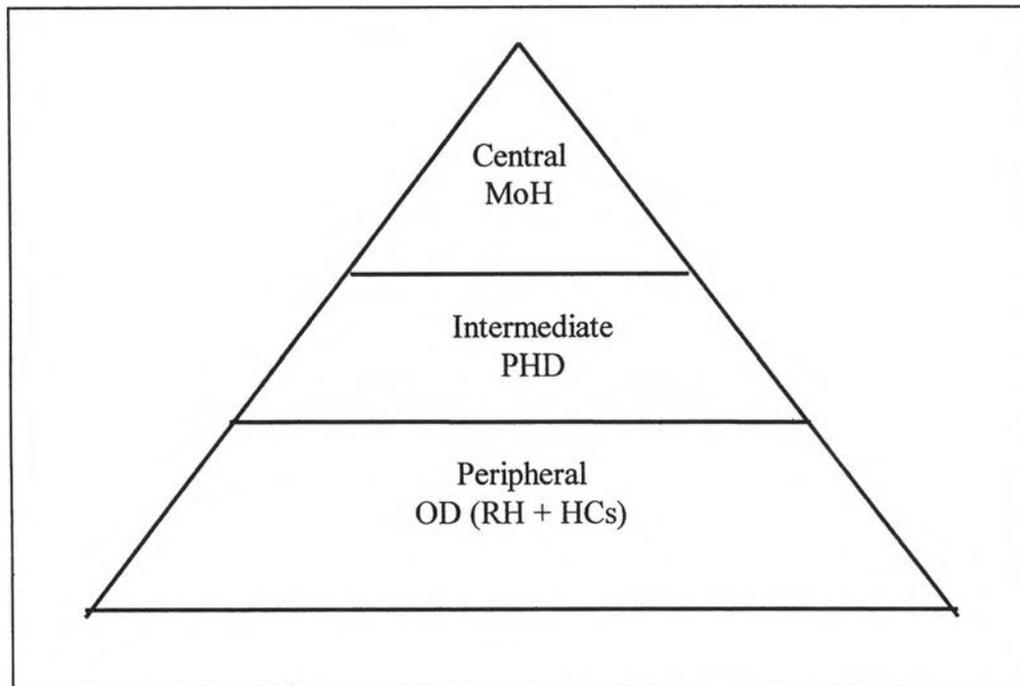
- Improving the population's confidence in public health services.
- Clarifying and reinforcing the role of referral hospitals and health centers
- Establishing the facility's catchment's area to ensure the population's coverage (Guidelines for Developing Operational Districts, December 1997).

Health sector reform in Cambodia is geared towards improving equity in access to and utilization of good quality services by the population, especially the poor, as well as making the best use of available resources. This involves the reorganization of the national health system; changing from an “*administratively organized to a population based system*”, and the equitable formula based allocation of funds. This is to ensure that public health spending is deployed to where it generates the best returns and deliver the cost-effectiveness services that benefit the poor.

The emphasis is on revitalizing health service, controlling communicable and preventable diseases, and building capacity to manage resources and deliver essential services more efficiently, and promoting a greater sense of responsibility in each individual for the protection and enhancement of personal and family health.

Within the framework of health sector reform, the budgeting and financial expenditure system has been improved gradually in order to improve the performance of health care delivery at all levels within the national health system. However, further reform is required to better the efficiency of government expenditure, including decentralization of budget management to health managers.

Figure 2.1 The Three Level of the Health System, Cambodia



Notes: MoH = Ministry of Heal
PHD = Provincial Health Department
OD = Operational District
RH = Referral Hospital
HCs = Health Centers

Source: Department of Planning and Health Information (1997).

2.3 Health Care System in Cambodia:

2.3.1 Utilization of Health Care Facilities

The trend that appears from the first sought to the third treatment is that the non-medical sector is the most popular sector for health care. The private sector is the second most popular, followed by the public sector. It is likely that people seek treatment from the non-medical sector for two primary reasons:

- First, the non-medical sector may be closer to the population and thus easier to access (see Table 2.1, transportation costs to the non-medical sector are lowest).
- Second, it appears from the information in Table 2.1 that the non-medical sector costs is considerably less expensive than the other sectors; this could also be an explanatory factor for the high rates of health care seeking in the non-medical sector.

Table 2.1 presents some significant differences evident by residence:

- Rural residences that are ill or injured are twice as likely not to seek treatment (12.0%) as urban residents (6.0%).
- There are no significance differences between rural and urban regions for the use of all public or private sector sources for health treatment.
- The private clinic was twice (15.3%, 4.2%, 1.8%) as common as a source of treatment in urban areas as in rural one (8.8%, 2.4%, 0.8%) respectively from the first to the third treatment.
- The non-medical sector was more common as a first treatment in urban (43.2%) than in rural areas (34.0%).

No differences were found in the second and third treatment. Dedicated drug stores with approved government licenses were three times as common for all level of treatment in urban areas (14.3%, 6.2%, 2.3%) as in rural areas (4.6%, 1.9%, 0.8%). The percentage of household members ill or injured seeking treatment by order of treatment and sector of health care was presented in Figure 2.2.

2.3.2 Distribution of Health Care Costs

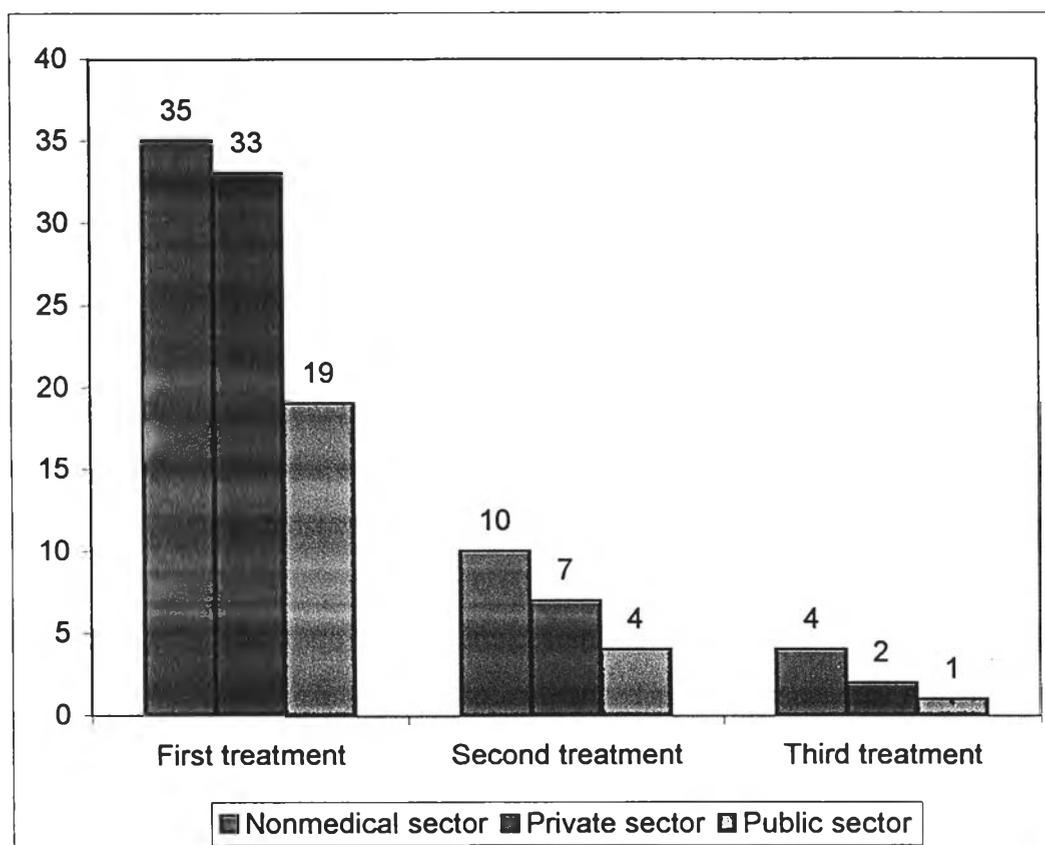
Health care costs remain a major household expenditure. The poorest spent the highest percentage of total household expenditures for health compared to other groups. As people represented slightly over two and one-half times the estimated monthly income for the large become wealthier, they spent more on health, suggesting an ability to pay. People spent on an

Table 2.1 Utilization of Health Care Facilities

Place of Treatment	Urban			Rural			Total		
	1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd
Did not seek treatment	6.0	74.3	89.7	12.1	78.8	93.1	11.4	78.2	92.6
Public sector	16.8	4.8	2.1	18.8	4.0	1.2	18.5	4.1	1.3
National hospital	4.4	1.5	0.8	3.6	0.7	0.1	3.7	0.8	0.2
Provincial hospital	7.5	1.8	1.1	2.9	0.7	0.3	3.5	0.9	0.4
District hospital	0.9	0.5	0.0	5.1	1.3	0.4	4.6	1.1	0.3
Health center	2.0	0.6	0.0	3.1	0.7	0.1	2.9	0.7	0.1
Commune clinic	1.2	0.0	0.0	3.1	0.5	0.2	2.9	0.4	0.2
Health worker (HW)	0.7	0.4	0.2	0.7	0.1	0.1	0.7	0.1	0.1
Other public	0.1	0.0	0.0	0.3	0.1	0.0	0.3	0.0	0.0
Private sector	32.2	7.3	3.0	33.0	6.8	2.1	32.9	6.8	2.2
Private hospital	2.9	0.6	0.5	1.2	0.4	0.1	1.4	0.4	0.2
Private clinic	15.3	4.2	1.8	8.8	2.4	0.8	9.6	2.6	1.0
Home trained HW	1.6	1.0	0.0	3.4	0.7	0.1	3.1	0.7	0.1
Visit of trained HW/N	10.6	1.1	0.7	16.3	2.7	0.8	15.6	2.5	0.8
Other private medical	1.8	0.4	0.0	3.3	0.6	0.2	3.1	0.6	0.2
Non-medical sector	43.2	13.1	4.9	34.0	10.0	3.4	35.1	10.4	3.6
Dedicated drugstore	14.3	6.2	2.3	4.6	1.9	0.8	5.8	2.4	1.0
Shop selling drugs	26.6	5.1	1.5	26.3	6.1	1.9	26.4	6.0	1.9
Traditional healer	2.0	1.5	1.0	2.8	1.9	0.7	2.7	1.9	0.7
Monk/religious leader	0.3	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.0
TBA	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Other	1.4	0.5	0.3	1.5	0.4	0.1	1.5	0.4	0.1
Total	100.0								

Note: Percent distribution of household members who were ill or injured in the past 30 days by place of treatment, according to number of treatments and residence, 2002.

Source: Calverton (2001).

Figure 2.2 Utilization of Health Care Facilities

Note: The figure shows percentage of household members ill or injured seeking treatment by order of treatment and sector of health care.

Source: Calverton (2001).

average US\$ 15 for one episode of illness. The average cost of hospitalization was US\$ 65 group of respondents in the survey, farmer on their own land (65.8% of total respondents) (The demand for health care in Cambodia, 1998).

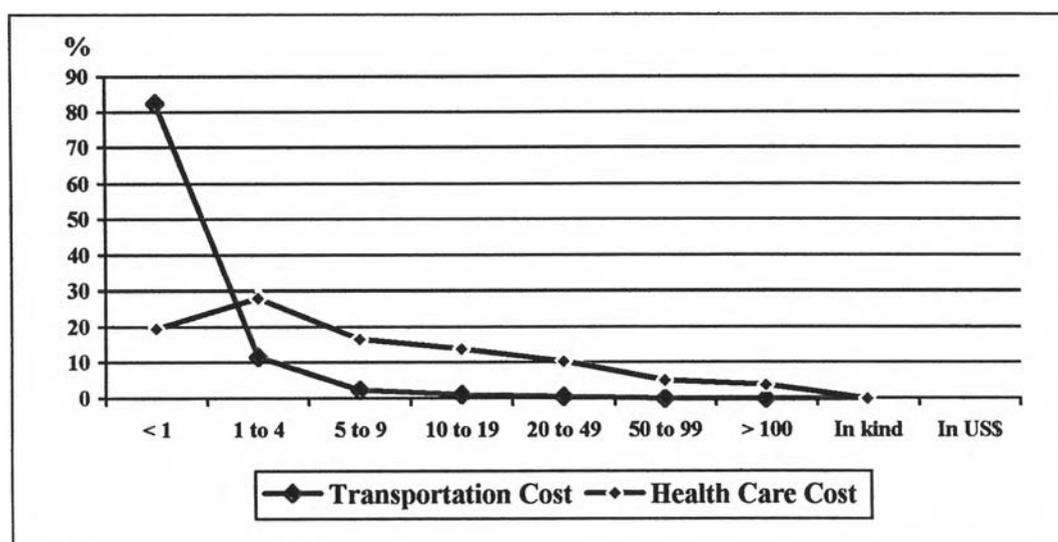
For each ill or injured person, the household respondent had to state the cost expended for transportation and treatment for each visit to a health care provider. These costs are presented in US dollars in Table 2 by amount of money spent for transportation and treatment.

Transport costs were less than treatment costs in most cases. For all treatments, 82.7% of those ill or injured spent less than \$1.0 on transport to health care provider. Expenditures on the actual treatment were much more varied. Slightly more than one-quarter of the ill or injured spent between 1 – 4 dollars for all types at 31.1%, 31.8% and 37.9%. For total costs, the most common amount of money spent was 1- 4 dollars (29.3%).

There are few differences among the percent distributions of money spent for transport and treatment by first, second, and third treatments. For the first through third treatments, 80.3% to 84.0% of all ill or injured spent less than \$1 for transport costs. But, for the first and second treatments, almost one third of all ill or injured spent from \$1 – \$4 for the combined cost of transport and treatment, at a rate of 31% and 32% in that order (see Figure 2.3 and Table 2.2).

2.3.3 Health Status

Cambodian Health is still among the worst in the Western Pacific Region. The overall health system performance was ranked 174th among other member states of WHO (WHO, 2000). The average life expectancy (LE) at birth is estimated at 54.4 years. Due to poverty, poor sanitation, and inadequate health services, it is estimated that one in ten children died before their fifth birthday. The pattern of morbidity and mortality have remained virtually unchanged for years, and the general populace seems to be greatly affected by the same disease (communicable diseases) including diarrhea, acute respiratory infection (ARI), dengue hemorrhagic fever, malaria, malnutrition, and other vaccine-preventable diseases. The World Food Program (WFP) has judged that the country's nutritional status remains one of the worst in Asia after Afghanistan and North Korea. In 1996, 49% of children aged 0 – 59 months were found to be moderately or severely underweight (see Table 2.3).

Figure 2.3 Distribution of Health Care Cost

Source: Plotted from Table 2.2

Table 2.2 Distribution of Health Care Cost

Amount Spent (US\$)	First Treatment			Second Treatment			Third Treatment			All Treatment		
	Tran	HC	TC	Tran	HC	TC	Tran	HC	TC	Tran	HC	TC
< 1	84.0	21.6	20.1	80.3	28.0	25.2	83.3	29.8	27.6	82.7	19.8	18.5
1 – 4	11.8	29.9	31.1	13.8	28.9	31.8	12.0	34.9	37.9	12.0	28.4	29.3
5 – 9	2.1	17.4	17.6	3.2	16.0	16.0	2.9	12.6	13.2	2.5	16.8	17.0
10 – 19	1.0	13.4	13.6	0.9	11.3	11.5	1.5	7.9	8.0	1.3	14.2	14.3
20 – 49	0.3	9.2	9.8	0.6	7.7	8.5	0.0	9.1	9.6	0.7	10.6	11.1
50 – 99	0.1	4.3	4.4	0.3	3.9	4.2	0.0	1.9	1.9	0.2	5.3	5.5
100+	0.1	3.1	3.3	0.4	2.2	2.4	0.0	1.5	1.5	0.2	4.0	4.4
In kind	0.2	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.2	0.1	0.0
Don't know/												
Missing	0.3	0.9	0.0	0.6	1.6	0.5	0.4	2.3	0.4	0.2	0.8	0.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

Notes: Tran = Transportation, HC = Health Care, TC = Total Cost

Source: Calverton, 2001

Maternal Mortality Rate (MMR) is high, with 473 per 100,000 live births, due mainly to abortion complications, eclampsia, and hemorrhage, reflecting the under-development of the health system and the poor access of pregnant women to essential obstetric services. High fertility also contributes to high mortality. Malaria is a major cause of morbidity and mortality in all age groups. Nearly 150,000 new cases were diagnosed and treated at public health facilities.

The fatality rate of malaria was 0.43% in 1998. But, poliomyelitis is completely eradicated in Cambodia that is confirmed by the WHO's Western Pacific Regional Committee. The percentage of children aged of 12-23 months with complete vaccination is 68%. The MMR is still the main problem (see Table 2.4).

HIV/AIDS now poses a serious public health problem in Cambodia due to the epidemic rapid pace of growth. In 2000, a sero-prevalence rate of 2.8 percent was found among the population age 15-49. Currently, it is estimated that there are about 169,000 HIV-infected people living in Cambodia (see Table 2.5).

2.3.4 User Fees in Cambodia

During the past two decades, health sector reform in many developing countries brought in the nation of introducing official charges for services generally provided free at public facilities. The initiatives were introduced to revive and gain control of poorly government-run health services based on one or more following strategies:

1. To provide an alternative channel for raising revenues to counteract insufficient government resources and growing demands on health care;
2. To strengthen the role of market forces in health sector;
3. To promote greater efficiency by influencing both provider and user behavior to produce more at lower cost;
4. To develop linkage with community members, and promote their involvement in the management of health services;
5. To promote sustainability of health services of adequate quality through the generation and use of additional resources;
6. To enhance provider capacity for consumer-orientation and improvement of service quality;

Table 2.3 Health Indicators for Some Asian Countries, 1997

Country	Average LE	Under 5 Mortality Rate	% of Children with Low Birth Weigh	TB Prevalence per 100,000	HIV/AIDS Prevalence (% of adult population)	Total Health Expenditure per head (US\$)
Lao	53	122	18	167.0	0.04	N/A
Cambodia	54	115	18	539.0	2.04	18
Indonesia	65	60	11	285.0	0.05	17
Vietnam	68	40	17	189.0	0.22	9
Philippines	68	41	11	310.0	0.06	N/A
China	70	47	9	33.7	0.06	19

Table 2.4 Main Cambodian Health Indicators: 1993 & 1998

Health indicator	1993	1998
Infant Mortality Rate per 1,000 live births	115	89.4
Under 5 Mortality Rate per 1,000 live births	181	115
Maternal Mortality Rate per 100,000 live births	N/A	473
Children's Nutrition Status	N/A	40% of under 5 malnourished

Table 2.5 People Living with HIV/AIDS in Selected Asian Countries, 1997

Country	Number aged 0 – 49	Adult Rate (% aged 15 – 49)	AIDs Cases per 100,000
Cambodia	130,000	2.40	N/A
Laos	1,100	0.04	1.3
Vietnam	88,000	0.22	1.3
China	400,000	0.06	N/A
Thailand	780,000	2.23	101.1
Philippines	24,000	0.06	N/A
Malaysia	68,000	0.62	21.5
Indonesia	52,000	0.05	N/A

Source: Calverton, 2001

7. To signal priorities in health service provision and increase equity through cross-subsidization within a comprehensive service package. (Introduction to User Fees in Cambodia quoted Russel and Gilson, 1995; Noland and Turbat, 1995; Unicef, 1999; Newbrander and Collins, 1999).

Likewise in Cambodia, the government introduced fees for services (FFS) at some public sector referral hospitals and health centers in 1997. The intentions were to promote *access and utilization* of health services by:

- Improving quality of care
- Promoting community co-management of health facilities
- Increasing resources for operating costs and staff incentives
- Improving access to government budget with enabling accountability and transparency (UNICEF, 1997).

The climate in which there were *widespread poverty*², a *heavy burden of communicable disease* results in high mortality rates among children and adult, especially women, impoverishing/depleting levels of health expenditures and a poor government infrastructure to deliver essential health care services. Public health staff poorly paid, at meager US\$ 10-15 a month creating rent seeking³ behavior and unofficial charges. Within the health care market, consumer faced uncertainty not knowing how much they have to pay, and to whom should payments be made, in addition, to what would be received in term of quality and appropriateness (NIPH/GTZ/WHO, 1998).

The Health Care Demand Survey (NIPH/ GTZ/WHO, 1998)⁴ revealed that the percentage of total household (HH) health expenditures averaged 22.1% or US\$13.9 for all occupations. the proportion being highest (28.0%) among the poorest people. Self-medication through purchase of drugs from unlicensed, untrained providers was the most common resource for the majority of people (58.0%). Almost one out of ten person who reported illness did

² Socioeconomic survey data, 1997: Phnom Penh: 11%, other urban area: 37%, rural area: 43%; in general, approximately 36% of Cambodian's population is living under poverty line.

³ Rent seeking is spending money in socially unproductive efforts to acquire, maintain, or exercise monopoly power (Microeconomics, Pindyck R. S., fifth edition).

⁴ The survey report was published in 1998. However, field data collection was conducted in 1996, and therefore, the estimates of health expenditures indicate the situation in 1996. This is prior to establishing the National Health Financing Charter and expenditures at public sector facilities are largely due to unofficial payments.

nothing to address their ailments (7.0%). Private providers were preferred for their qualifications, their prompt actions, more accessible operating hours and having an adequate supply of medicines. The overall picture was presented in Figure 2.4.

In 1996, Cambodian who choose to self-medicate as their first choice of treatment spent an average amount of \$5 for one visit to drug sellers. The price of ambulatory medical care was highest at public hospital, incurred almost \$18 for one visit, more expensive than any other health care providers. Household costs for a single visit to private practitioners cost over \$16.

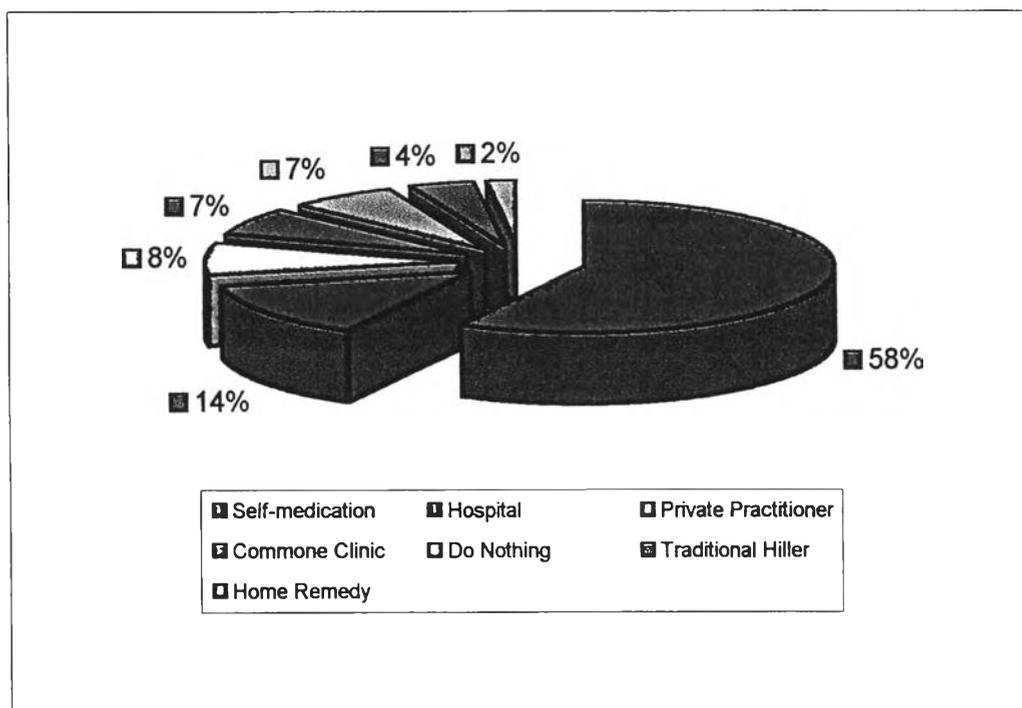
Health Care Demand Survey indicated that, on average, household spent for health care over \$7 for their first contact with any provider. The average expenditure for one episode of illness was over \$15. Those who reported being hospitalized within a recall period of 12 months spent \$65 per episode on average.

The data of 1996 survey indicated the existence of unofficial payments, and prompted official charges in order to induce accountability and regulatory mechanism among service providers. Thus, user fees were introduced to provide an alternative and supplementary mode of financing public health services in exchange for improving public service quality. In other word, official charges were levied to reduce unofficial payments and subsequently, household health expenditures and their impoverishing effects. The latter was set to address a significant barrier of access (geographical distance).

2.4 The Impact of Fees on Equity and Access to Services

Health centers with user fee schemes are increasing equitable access for the poor to primary health care. However, user fees in referral and national hospitals often act as a barrier to the poor. Low official fee levels, readily accessible exemption schemes, and the virtual elimination of unofficial fees are increasing access for the poor at health centers.

At provincial and national referral hospitals, user fees remain a major barrier to access for the very poor. Even where fee levels in hospital have been significantly reduced as at Takeo hospital, the very poor face still desperate hardship in raising the money, and often do not even attempt to access services.

Figure 2.4 Health Care Provider Choices During Illness Episode, 1996

Source: Health Economics Task Force (2000).

Paying for health care, particularly secondary or tertiary care, is still a major cause of destitution among the poorest. Interviews with discharged patients and focus group discussion (FGD) with community members revealed numerous incidences of poor people having to sell land, animal or property to pay for health care. This is particularly the case in rural areas, where there is often little cash in circulation. In many cases, this has forced families who were already poverty stricken into a state of destitution.

There is a major failure of exemption schemes in hospitals to protect the poor. People at community level are often unaware of hospital exemption schemes and hospitals generally do little to increase this awareness. On the contrary, many actually attempt to conceal the existence of exemption schemes whereas exemption schemes at health centers are generally well publicised.

There is a systematic conflict between a viable exemption scheme and a viable incentive scheme. Under the current system, facilities that grant exemptions are not reimbursed for the services they provide to the poor. This provides a major disincentive to grant exemptions, especially in facilities which are operating at, or near to full capacity, where every exemption provided is effectively paid for by the staff themselves from their reduced incentives.

This tension between a viable exemption scheme and a viable incentive scheme is part of a broader systemic tension, inherent in the design of the health financing scheme, between equity and efficiency. If these tensions are to be relieved, it is clear that the mechanism for financing exemptions must be completely separated from the mechanism for financing salary supplements and operating costs (Report of a study to evaluate the impact of user fees on access, equity and health provider practices, 2001).

2.5 Health Care Services Delivery in Sotnikum under New Deal

2.5.1 Sotnikum Operational District

Although Siem Reap is experiencing an explosive economic growth from tourism, Sotnikum operational district remains a poor rural area with 218,000 inhabitants, located at 30 Km from Siem Reap town, in the province where the historic wonderful and magnificent temples of Angkor Wat are located. Sotnikum Operational District comprises 3 administrative districts.

All 17 health centers foreseen in the health coverage plan are now functional and offering the full MPA.

Sotnikum referral hospital has 120 beds after one year of implementing the project and is providing the full CPA. But, because of the existence of two paediatric charity hospitals in Siem Reap, most of the inpatients are adults. Furthermore, the hospital suffers from chronic understaffing. Most patients referred by the health centers to attend the referral hospital and over 70% of hospital inpatients are referred by health centers.

At the beginning of 2001, it was clear that the New Deal had effectively broken the vicious cycle, on the positive side, of staff demotivation and the under-utilization of services. This better service was clearly acknowledged by the population through patient's satisfaction survey.

2.5.2 Objectives for a New Deal

The New Deal is a local experiment launched in Sotnikum district, Siem Reap province, Cambodia by Ministry of Health, MSF and UNICEF, to break the vicious cycle of under-payment of health staff and under-utilization of the public health services by the population. The New Deal tackles the low official income and introduces the logic "better income for the staff, in exchange for a better service to the population".

The New Deal started in December 1999 and the agreed fees are low enough, and affordable for patients who have ability to pay. Furthermore, there are exemption system for the poor.

The objectives were:

1. Improve accessibility to quality health care,
2. Building health care system with good quality care to the population. The existing health system in Sotnikum should function optimally, with the building blocks: a referral hospital, health centers, and an operational district office.

2.5.3 Rational

By 1999, there was general dissatisfaction with the public health system by all actors involved. While similar projects sometime bring impressive benefits to populations in even poorer African countries, results in Cambodia remained low and unsatisfied. The unpredictable

commitment of civil servants, the high misappropriation of resources used, the lack of social accountability, and the prioritization of personal objectives were the main frustration.

There was a little improvement in service delivery even they received more financial and technical assistance from donors and international organizations. There was dissatisfaction among people because of low quality of care, unpredictable informal fees, unattractive services and treatments, long waiting times, frequent absence of health staff, etc. were the main causes of underutilization of public health facilities.

2.5.4 Basic Principle

Better income was used as an entry point for high accountability. Better income is given in exchange for strict adherence to internal regulations:

- Job description and working hours
- No informal fees
- No misappropriation of money, drugs, and materials
- No diversion of patients to private practice
- Access to the poor should be improved through an equity fund
- More stakeholder should be involved
- Total transparency at all levels of the management system
- Individual contracts were signed between individual staff members and the management committee.
- All actors would agree to work towards a common objective: “better service for the population in exchange for a better income for health staff”(using bonus system).

2.5.5 The Equity Fund

Before the New Deal, official fees were very low in Sotnikum OD. The New Deal increases the official user fees, especially at the hospital level, as a main part of the hospital revenue to pay to improve staff motivation. External donors have initially brought most of the needed supplementary funds, but local revenues are intended to take over later. Simultaneously imposing the facilities to accept poor patients for free of charge would definitely be a contradictory message to the hospital revenue. To avoid this drawback, it has been decided that the hospital should be freed from the role of identifying and exempting poor patients. Finally, a local NGO has been entrusted.

The Equity Fund, has organized by a local NGO alls CFDS, has been set up to develop a sustainable solution to improve financial access to hospital care for the poor. So the principle of the equity fund is to take care of the poor patients who arrived to the hospital. This process has worked by two ways:

- 1) The hospital staff refer “visibly poor patients” to CFDS,
- 2) CFDS then verifies eligibility through in-depth interview as a way to prevent fake declarations.

Relationship between demand and supply for health care market was the general pattern in Cambodia. that show what are the most important factors that influence service utilization in public health facility, especially in Sotnikum hospital under New Deal. A range of factors that influence utilization of hospital services were really increased by reducing at least three main constraints under the New Deal approach. So, increasing in the service utilization depends on three main factors such as quality of care of the hospital, referral system of the suppliers and financial constraint of the patients. The basic elements of the framework are *color blocks*, which are the main causal positive relationships (see Figure 2.5).

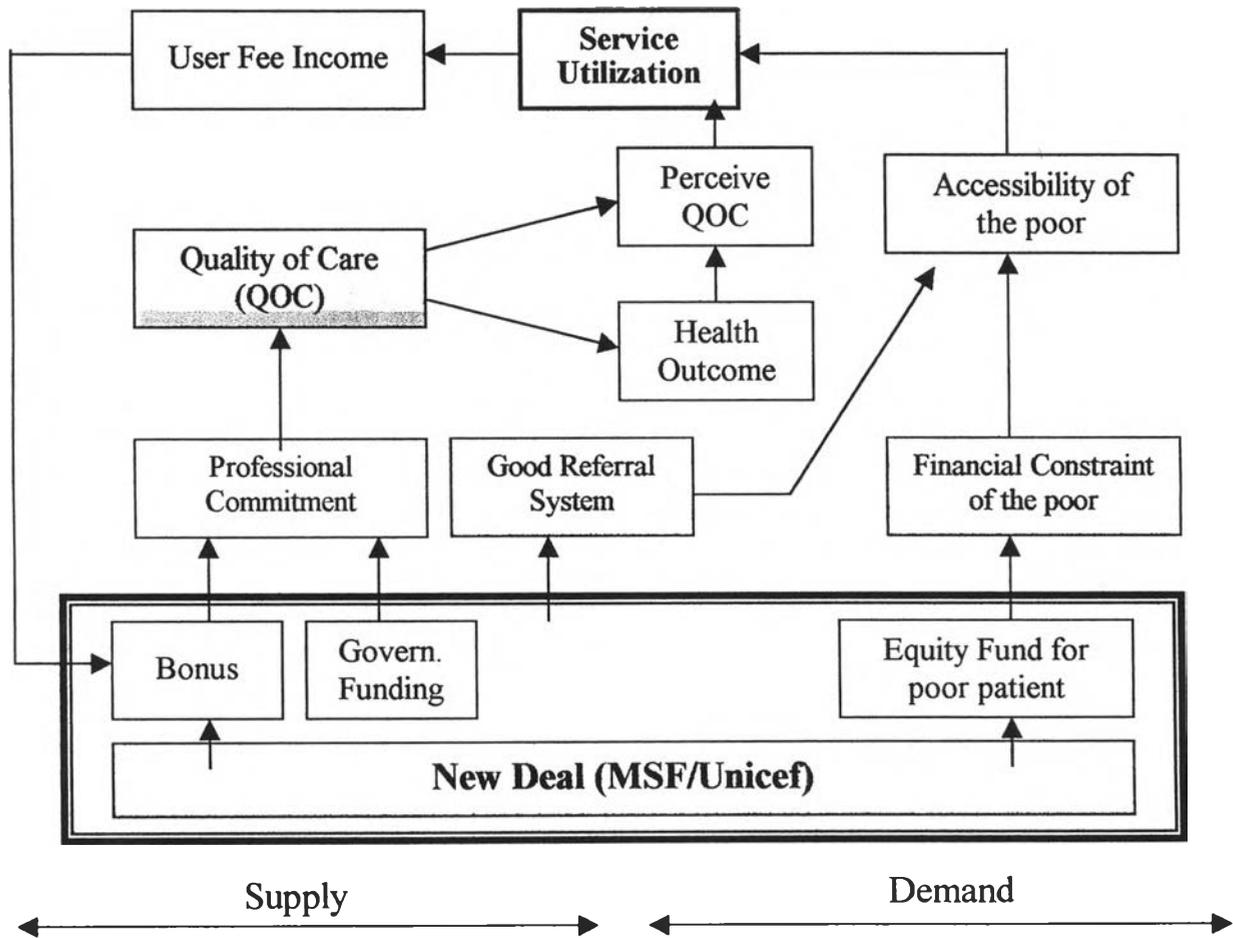
2.5.6 Results of the New Deal

After one year, the New Deal has shown that it is indeed possible to break this vicious cycle. Since its inception, staff earned an increased official income ranging on an average between \$60 to \$100 monthly compared to \$10 to \$15 previously, the commitment of the hospital staff to their job has increased sustaintially, and utilization of the hospital services by the population increased in parallel.

In general, the New Deal basically worked. All staff continued to sign individual contracts and formally respected the internal regulations. The fundamental changed:

- staff presence with permanent 24 hours,
- fees are transparent,
- emergencies are attended at night,
- patients receive enough drugs without purchasing at any private pharmacies,
- no more informal payments (patient satisfaction survey),
- most staff have worked between 50 – 60 hours per week (officially 35 hours),
- staff receive monthly bonus steadily growing well above the negotiated “maximum bonus”,
- full CPA: Surgery, blood bank, X-ray, hospital 120 beds (80 beds before New Deal),

Figure 2.5 Diagram shows the main factors influencing service utilization



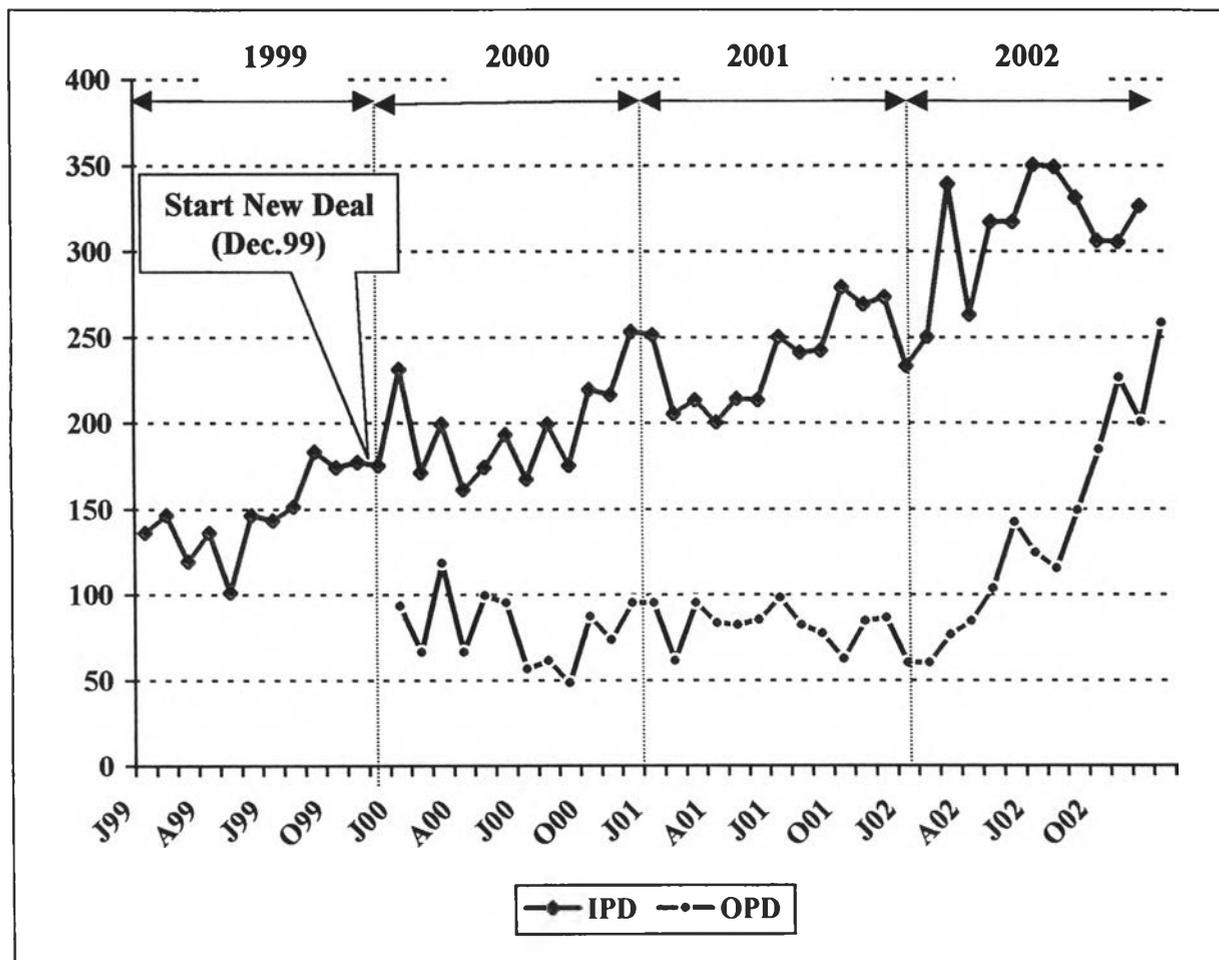
- number of IPD increased, 50% from 143 to 214 in 2000, 67% from 143 to 239 in 2001, and 111% from 143 to 302 in 2002 compared with 1999 (see Table 2.6). The result of this improvement is also shown in Figure 2.6 below.

Results of the second year, the New Deal has confirmed its ability to satisfy the basic need of the health workers. All categories of personnel remained satisfied with their bonuses. After having the agreement among all actors involves that had doubled the 5% of funds the operational district office (ODO) received from the health centers, later in the year, the ODO started to collect more income through per diem from the World Bank. So, their bonus is in line with those earned in the best performing facilities (see Table 2.7).

Table 2.6 Activity of Sotnikum Hospital: 1999 – 2002

Activity	1999	2000	2001	2002
IPD admission				
Total admission	1799	2370	2862	3698
Malaria (discharged)	651	418	565	209
Other	1148	1952	2297	3489
OPD consultations				
Total consultations	-	969	1002	1733
IPD discharged (general)				
Total discharged cases	1714	2563	2868	3628
HC referrals (from OD)	508	854	1269	1997
HC referral (outside OD)	-	6	74	164
Self referrals (from OD)	1206	1686	1426	1122
Self referrals (outside OD)	-	17	99	345
BOR in % (excludes TB)	31	52.8	81.6	95.9
ALOS (excludes TB)	7	7.4	10	9.7
Mortality rate in % (excludes TB)	3.5	2.57	4.3	3.3
IPD discharged (by service)				
Total discharged cases	1719	2594	2935	3628
Medicine	688	1265	1206	1497
Surgery	174	225	493	642
Pediatric	195	305	312	297
Maternity	142	251	375	492
Emergency	257	302	331	341
TB	263	246	218	359
Surgery				
Total operations	-	59	342	477
Emergency operations	-	18	170	99
Obstetrics				
Total deliveries	59	119	161	159
Caesarean sections	-	1	28	11
Laboratory				
Total positive malarias (smear + dipst.)	651	418	147	209
TB New BK+	778	326	649	738
Blood Bank				
Total Collected blood	-	46	167	142
Discarded blood	-	1	43	11
Transfusion	-	34	115	97

Figure 2.6 Monthly Activities in Sotnikum Hospital: 1999 – 2002



Source: Plotted from Table 2.6

Table 2.7 Spread of monthly average bonuses for Sotnikum, 2001

Facility	Number of months	Individual Monthly Bonus (US\$)		
		Highest	Lowest	Average
ODO	12	134	26	68
Hospital	12	156	35	78
Sam Rong HC	12	96	86	88
Sang Vui HC	12	74	64	66
Kean Sangke HC	12	70	60	63
Anlong Samnor HC	12	88	78	80
Spean Thnot HC	12	67	57	69
Kampong Kleang HC	12	66	56	58
Lveang Russey HC	9	61	51	49
Svay Leu HC	8	57	47	49
Pongro Krom HC	6	63	53	55
Dam Dek HC	2	76	66	68
Kok Thlok Krom HC	2	66	56	58
Kampong Kdei HC with beds	1	118	98	101

Source: Meesen and Van Damme (2002).