

# The Impact of Implementing the Self Finance System on Hospital Utilization Indicators in Baghdad City

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## Summary:

**Background:** Ministry of Health, since its establishment, adopted the policy of central financing system and free medical services in all health facilities. The sanction and the decline in per capita spending affect the health financing system, thus in 1997 a new financing policy was adopted as pilot in seven specialized hospital called "self-finance" system in which the cost of care was shifted to the patients, i.e. the funds obtained came from user charges at the health facilities. This system was extended (with some modifications) to all hospitals in 1999 and PHC centers in 2001 and implemented until 2003 when it was discontinued.

**Materials and Methods:** During the second half of 2004, a review of hospital records was performed to compare some hospital utilization indicators for a five months period before and after implementing the Self Finance System (October 1998 – February 1999 and October 1999 – February 2000 respectively).

A convenient sample of eleven hospitals from the three Health Directorates in Baghdad city were chosen, excluding seven hospitals in which a special form of self finance system was adopted, and the indicators (Bed Occupancy Rate, Hospital Stay Rate, Inpatient Fatality Rate) among each directorate were measured from the hospitals of each directorate before and after implementing the self finance system.

**Results:** The study showed that after implementing the self finance system, the Bed Occupancy Rate in the general wards of both the Medical City and AL-Yarmouk Health Directorates were increased, and decreased in the private wards, the opposite was true for Baghdad Health Directorate, where as the Hospital Stay Rate in the private wards of all Health Directorates and the general ward of Baghdad Health Directorate were higher after implementing the self finance system. Inpatient Fatality Rate increased in all Health Directorates.

**Conclusions:** The implementation of the self finance system affects the utilization of hospitals in many ways, and it has both positive and negative impacts on both the patients and the health professionals.

**Key words:** Self finance system, Hospital utilization indicators.

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## Introduction:

Ministry of Health (M.O.H.), since its establishment at 1958 adopted the policy of central financing system and free medical services in all health facilities (Primary Health Care (PHC) Centers, hospital, preventive and curative activities). In 1972 outpatient clinic examination fees of 25 fills were initiated at governmental hospitals for curative care while examination for PHC was free. In 1982 the examination fees increased to 100 fills and in 1983 100 fills drug fees were added on with exemptions to different categories. In the same year the Minister of Health authorized charging from inpatients in government hospitals private wards and nursing home. In 1984 patient charges were instituted for public clinic & cardiovascular hospitals, in addition foreigners and non-resident Arab people were also included in the schedule of charges.(1)

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Traditionally, almost all services provided by PHC centers and hospitals are free except for consultations at "public" and "insurance" clinics which operate in the afternoons at low cost to patients. Within the last decade per capita spending on health fell dramatically. Analysis by the Ministry of Health suggests that during the 1990s funds available for health were reduced by 90%. According to the Human development Report 2000, health expenditure was 3.72% of Gross Domestic Product (GDP) in 1990, reduced to 0.9% in 1995 and 0.81% in 1997.(2) Because of that and due to sanctions in 1990, the health financing system was severely affected due to limited budget allocation, thus in 1997 a new financing policy was adopted as pilot project in seven specialized hospital called "self-finance" system in which the cost of care was shifted to the patients, i.e. the funds obtained came from user charges at the health facilities. Most of the revenue was retained at the facility level and used to pay salary incentives for staff. Income generated

from drugs co-payment was used to purchase medicines from the State Company for Drug Marketing (KIMADIA) and for incentives to pharmacists. (1) This system was extended (with some modifications) to all hospitals in 1999 and PHC centers in 2001 and implemented until 2003 when it was discontinued. Psychiatric and Fever hospitals were excluded from the self finance scheme. (1) Available information suggests that the health expenditures increased from 1.1 % of overall family expenditure in 1993 to 4.2 % in 2002. Out of the US\$ 50 million operating expenditures more than US\$ 41 million came from the self finance system and only US\$ 9 million from the Ministry of Finance. About one half of the MOH operating expenditures went for salaries and incentives to staff, The funds used for operating expenditures including pharmaceuticals were too small to cover any significant maintenance or operating function. (1), (3), (4)

#### Materials and Methods:

During the second half of 2004, a review of hospital records was performed to compare some hospital utilization indicators for a five months period before and after implementing the Self Finance System (October 1998 – February 1999 and October 1999 – February 2000 respectively). A convenient sample of eleven hospitals from the three Health Directorates in Baghdad city were chosen, excluding seven hospitals in which a special form of self finance system were adopted, and the indicators among each directorate were measured from the hospitals of each directorate.

The sample includes:

#### Medical City Directorate

Baghdad Teaching Hospital, Surgical Specialties Teaching Hospital. , AL-Mansour Pediatric Teaching Hospital.

#### AL-Yarmouk Health Directorate

AL-Yarmouk Teaching Hospital. , Central Pediatric Teaching Hospital

#### Baghdad Health Directorate (Kerkh and Risafa)

AL- Kadhemia Pediatric Hospital , AL- Noor General Hospital , AL- Kerkh General Hospital , Iben Beldy General Hospital , AL- Thaora General Hospital , AL- Nu'man General Hospital.

The Department of Health and Vital Statistics, Ministry of Health (MOH), received a special form for monitoring hospital services utilization. These forms were studied thoroughly and some indicators were used for the purpose of comparison.

The indicators studied were: Bed Occupancy Rate, Hospital Stay Rate. , Inpatient Fatality Rate.

Bed Occupancy Rate (BOR) was calculated from the following equation:

$$\text{BOR} = \frac{\text{Total hospital stay days during a period (month (s), year)}}{\text{Number of prepared hospital beds} \times \text{Number of days of that period}} \times 100$$

Number of prepared hospital beds X Number of days of that period

Hospital Stay Rate (HSR) was calculated from the following equation:

$$\text{HSR} = \frac{\text{Total hospital stay days during a period (month (s), year)}}{\text{Total number of admitted patients}^*}$$

Inpatient Fatality Rate (IFR) was calculated from the following equation:

$$\text{IFR} = \frac{\text{Number of deaths among inpatients During a period (month (s), year)}}{\text{Total number of admitted patients}^*} \times 100$$

\* Admitted patients include those who were discharged during the month and those who stayed at the end of the month.

Those indicators were studied in the general and private wards of each hospital before and after implementing the self finance system and the indicators of each directorate were analyzed using the change percent.

Change Percentage was calculated from the following equation:

$$\text{Change Percentage} = \frac{\text{New rate} - \text{Old rate}}{\text{Old rate}} \times 100$$

#### Results:

Table (1) showed the distribution of Bed Occupancy Rate by Health Directorate and Wards' type, it was found that the Bed Occupancy Rate in the general wards of both the Medical City and AL-Yarmouk Health Directorates were higher after implementing the self finance system with a change percentage of 52.25 % and 9.2 % respectively, and lower in the private wards with a change percentage of -14.2 % for the Medical City and -28.5 % for AL-Yarmouk Health Directorate. Regarding Baghdad Health Directorate the opposite was true. (Change percentage of -17.5 % in the general ward and 43.4 % in the private ward). Table (2) showed the distribution of Hospital Stay Rate by Health Directorate and wards' type, it was found that the Hospital Stay Rate in the private wards of all Health Directorates ( Medical City AL-Yarmouk and Baghdad) and the general ward of Baghdad Health Directorate were higher after implementing the self finance system with a change percentage of 63.2 %, 5.1 % and 82.9 % for the private wards of the three Health Directorates respectively and 8.8 % for the general ward of Baghdad Health Directorate. While the rate was lower in the general wards of both the Medical City and AL-Yarmouk Health Directorates after implementing the self finance system with a change percentage of -8.06 % and -15.5 %

respectively. Regarding Inpatient Fatality Rate, table (3) showed that this rate was higher in all Health Directorates after implementing the self finance system except in the private ward of Baghdad Health Directorate (change percentage of -56.2 %).

**Discussion:**

The health system conceptual framework put forward in the World Health Report 2000, proposes four major functions of the health system – Stewardship, Financing, Resource Creation and Service Provision. (5), (6) Regarding health finance, it is claimed that universal free health care reinforces inequitable distribution of resources in that it provides better access to services in wealthy urban areas at the expense of poor and rural population. (7), (8) The dominant theme in the efficiency rationale for user fees is that charging attaches value to a service i.e. it increases demand by increasing perception of quality and deterring unnecessary use of health care system.(9) The Bed Occupancy Rate is a calculation used to show the actual utilization of an inpatient health facility for a given time period, it is a valuable statistical measurement and is usually calculated for a certain period of time (month, year, etc.) as opposed to calculating for one particular day. Determining the occupancy for a longer time period reflects the degree to which hospital beds have been utilized even though the number of beds may have changed during the reporting period. (10) The increase in the Bed Occupancy Rate (table (1)) especially among the general wards reflects the improvement in the provision of health services after implementing the self finance system like the availability of drugs, medical equipments and diagnostic tools on one hand and improvement in the performance of health professionals due to the presence of updated journals and literatures and increased incentives on the other hand. The availability of money at the level of the Health Directorates and hospitals allow rapid repair for the buildings and medical equipments and better house keeping. This also will explain the preference of the general wards by patients as they will get accepted services with accepted amount of payment, in comparison with the private sectors which were very expensive. Regarding the Hospital Stay Rate (table (2)), the reduction in that rate among the general wards of both the Medical City and AL-Yarmouk Health Directorates may be due to the improvement of diagnostic and treating facilities so that the patient will be discharged faster, and severe cases that need longer stay may prefer the private wards. The increase in the Inpatient Fatality Rate (table (3)) was either due to the increase in the hospital admissions or because some of the patients were admitted in late stages of their illnesses for financial reasons. The impact of the financial aspect was mentioned by

Lafta R. K. in his report about the financial aspect of the health system in Iraq, when he stated that the citizens were completely funding their health services.(4)

**Table (1): The Distribution of Bed Occupancy Rate by Health Directorate and Wards' Type**

Heath Directorate	General Ward			Private Ward		
	Before	After	Change %	Before	After	Change %
	Self Finance	Self Finance		Self Finance	Self Finance	
Medical City	37.7	57.4	52.25	39.4	33.8	-14.2
AL-Yarmouk	49.1	53.6	9.2	52.6	37.6	-28.5
Baghdad (Kerkh & Resafa)	65.1	53.7	-17.5	68.04	97.6	43.4

**Table (2): The Distribution of Hospital Stay Rate by Health Directorate and Wards' Type**

Heath Directorate	General Ward			Private Ward		
	Before	After	Change %	Before	After	Change %
	Self Finance	Self Finance		Self Finance	Self Finance	
Medical City	6.2	5.7	-8.06	5.7	9.3	63.2
AL-Yarmouk	4.5	3.8	-15.5	3.9	4.1	5.1
Baghdad (Kerkh & Resafa)	3.4	3.7	8.8	3.5	6.4	82.9

**Conclusions:**

The implementation of the self finance system affects the utilization of hospitals in many ways, and it has both positive and negative impacts on both the patients and the health professionals. Provision of health services is a very delicate subject and changing the existing system has to be studied thoroughly before implementation.

**Table (3): The Distribution of Inpatient Fatality Rate by Health Directorate and Wards' Type**

Heath Directorate	General Ward			Private Ward		
	Before Self Finance	After Self Finance	Change %	Before Self Finance	After Self Finance	Change %
	Medical City	72.4	77.6	7.2	14.97	25.8
AL-Yarmouk	75.6	89.7	18.6	13.3	29.1	118.8
Baghdad (Kerkh & Resafa)	25.6	38.7	51.2	4.8	2.1	-56.2

**References:**

1. Alwan A.; *Health in Iraq. The current situation, our vision for the future, and areas of work.* 2<sup>nd</sup> ed. Baghdad, Ministry of Health, 2004.
2. Telyukov A.; *Resources and costs in primary health care sector of Iraq; base line study.* Ministry of Health, Abt Associates and international Medical Corps, July – September, 2003.
3. Lafta R. K.; *The financial aspect of the health system in Iraq.* Iraqi J. Comm. Med., April. 2005, 18(2), P. 127-130.
4. World Health Organization (WHO); *Health systems: Improving performance.* World Health Report 2000 - Geneva. WHO, 2000.
5. Murray C. J. and Frenk J.; *A framework for assessing the performance of health systems.* Geneva, Bulletin of the WHO, 78(6):717-31, 2000
6. Birdsall N.; *Pragmatism; Robin Hood and other Themes: good government and social well – being in developing countries.* (1989) New York; Rockefeller Foundation.
7. World Health Organization (WHO); *Health System Profile, Iraq.* EMRO, Division of Health System and Services development (DHS), Health Policy and Planning Unit; June 2005.
8. Foreit K, Levine R; *Cost recovery and user fees in family planning.* (1993) Policy paper series No. 5. Washington, DC, the Future Group.
9. Part J, and Neil P; *The impact of the introduction of user fees at a district hospital in Cambodia.* (2004) Health policy and planning. 19(5):310-321
10. Pennsylvania Department of Health; *Occupancy rates in health facilities.* Health Statistics - Technical Assistance Tools of the Trade (717)783-2548