

# Benefit–incidence analysis of government spending on Ministry of Health outpatient services in Jordan

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تحليل المنافع ومعدلات الاستخدام للإنفاق الحكومي على وزارة الصحة لتقديم خدمات المرضى الخارجيين في الأردن  
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الخلاصة: أجرى الباحثون تحليلاً للمنافع ومعدلات الاستخدام للإنفاق الحكومي على وزارة الصحة لتقديم خدمات المرضى الخارجيين في الأردن لعام 2000، باستخدام مصادر مختلفة للمعلومات تشتمل على المسح الأردني للنفقات واستخدام الرعاية الصحية لعام 2000. وتوضح النتائج أن الناس الأشد فقراً من السكان الأردنيين هم الأكثر تعرضاً للأمراض ولطلب المعالجة، وهم المستخدمون الرئيسيون للخدمات التي تقدمها وزارة الصحة للمرضى الخارجيين. وقد كان الناس الأكثر فقراً والذين يفتقدون التأمين الصحي هم المصدر الرئيسي للعوائد التي تجنيها وزارة الصحة من الأجور التي يدفعها المستخدمون لقاء الخدمات، وقد بلغت الكفاءة المستهدفة (ونعني بها النسبة المئوية الإجمالية للمنافع التي تم الحصول عليها) لدى الشريحة الخمسية الأشد فقراً هي 33.8% مقارنة لما لدى الشريحة الخمسية الأكثر غنى وهو 4.0%. ويوضح التحليل أن ما تقدمه الحكومة الأردنية من تبرعات عينية يصل إلى الفقراء.

ABSTRACT A benefit–incidence analysis was conducted for the year 2000 using various data sources including the *Jordan healthcare utilization and expenditure survey 2000*. The results illustrate that the poorest segment of the Jordanian population were the most likely to report sickness and seek treatment and were the main users of the Ministry of Health outpatient services. The poorest uninsured individuals were the main source of revenues generated through user fees. The targeting efficiency (i.e. total percentage of benefits received) for the poorest quintile was 33.8% compared with 4.0% in the richest quintile. The analysis demonstrates that the Jordanian government in-kind subsidy is reaching the poor.

## Analyse de l'incidence des dépenses publiques pour les consultations externes du ministère de la Santé en Jordanie

RÉSUMÉ Une analyse de l'incidence des avantages a été effectuée pour l'année 2000, à l'aide de différentes sources de données, y compris l'enquête sur l'utilisation des soins de santé et les dépenses afférentes réalisée en Jordanie en 2000. Les résultats montrent que les individus de la couche la plus pauvre de la population jordanienne sont les plus susceptibles de déclarer une maladie et de rechercher des soins, et sont les principaux utilisateurs des consultations externes du ministère de la Santé. Les personnes les plus pauvres, qui n'ont pas d'assurance, représentent la principale source de revenus générés par le paiement direct des usagers. L'efficacité du ciblage (c'est-à-dire le pourcentage total des prestations reçues) pour le quintile le plus pauvre est de 33,8 % contre 4,0 % pour le quintile le plus riche. L'analyse a démontré que les prestations en nature du gouvernement jordanien parviennent au quintile le plus pauvre.

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Received: 10/09/07; accepted: 12/05/08

## Introduction

Recent health systems reforms in developing countries have been dominated by neo-liberal concepts, including introduction of user fees, cost recovery, reallocation of resources from curative to preventive care and large reductions in public expenditure. These reforms were implemented on the principle of improving the efficiency of government social interventions [1,2]. The results, however, have been devastating in many countries, including those with previously strong health systems, such as in Eastern Europe, where health indicators and health system outcomes have deteriorated [3]. Additionally, these reforms have contributed to health inequities by undermining the capacities of health systems in low- and middle-income countries. Inequity has further increased through the cost burdens imposed by user fees and the international migration of scarce human resources [2].

Jordan, like other countries in transition, faces problems of debt, poverty and unemployment. These challenges, combined with demographic changes, water shortages and limited natural resources, motivated the government of Jordan to launch a social and economic transformation plan, with the objectives of improving economic growth, alleviating poverty and improving the quality of public services [4,5]. Good health status is recognized as essential for improving the earning potential of the population, particularly the poor [1,6]. In 2004, the Jordanian Ministry of Health (MOH) ended the first stage of a long-term health reform that focused on containing growth in health expenditure, assuring efficient utilization of facilities and improving the quality and delivery of health care services [7]. Building on this foundation, a second phase was developed to address issues related to equity, quality, management, pricing policies, cost-effectiveness and the public/private mix in health care [4]. To address "inefficient" pricing policies and

to generate resources, MOH decided in 2004 to re-evaluate its pricing policies for services provided through MOH facilities at all levels of care. A decision was reached to increase user fees gradually to reach full cost recovery within 5 years.

Benefit-incidence analysis is utilized in this paper to bridge the gap in current knowledge about the efficiency of using government subsidies for outpatient services provided by Jordanian MOH health care centres, i.e. whether government health care subsidies reach their target group, and the possible role these subsidies play in enhancing equity of access to basic health care services in Jordan.

## Methods

A benefit-incidence analysis was used, with the year 2000 as the reference year, to measure the extent to which different groups within the Jordanian population capture the public subsidy provided through public provision of health care services [1,8,9]. This paper focuses on public subsidies to outpatient services provided at MOH health centres (primary and comprehensive).

### Health system in Jordan

Jordan's health sector is an amalgam of several separate private and public subsystems. The MOH finances and delivers care for civil servants and their dependants, and to patients who cannot or choose not to use other providers. The ministry operates hospitals as well as health units, primary health care centres and comprehensive health care centres (the health units and centres will be the focus of this paper and will be referred to as HCC). The Royal Medical Services finances and delivers care to military personnel and their dependents. Other smaller public programmes include several university-based programmes, such as the University of Jordan and the King Abdullah the First teaching hospital. In addition, several nongovernmental organizations

(NGOs) and donor-owned and -operated facilities exist, the largest being the United Nations Relief and Works Agency (UNRWA), which provides care mostly to Palestinian refugees. There is a sizeable private sector including doctor's offices, clinics and hospitals [10].

A survey conducted in 2000 found that 60% of the Jordanian population are insured and that 6% of those insured have multiple insurances, whereas 40% had no insurance cover [11].

### Sources of data

Our main source of information on utilization of health services and out-of-pocket (OOP) expenditure by wealth quintiles was the *Jordan healthcare utilization and expenditure survey 2000*, a nationally representative survey of 8306 households and 49 000 individuals [11]. Individuals were asked whether, conditional on being ill, they had used a health care provider in the past 2 weeks. The data showed that 1031 individuals had made an outpatient visit in the 2 weeks preceding the survey and all of them were included in the analysis.

Two sources of data were used to estimate service unit cost of public subsidy for the benefit-incidence analysis. First, the *Jordanian national health accounts 2000-2001* provides estimates at the national level of public expenditure on MOH HCC [10]. For the purpose of this analysis only resources from the Ministry of Finance (MOF) were used as real expenditure in MOH HCC, since funds from other sources (household and Royal Medical Services) are not kept at the facility level. The second source was *Rationalizing staffing patterns and cost analysis of primary health services in Jordan 1999*, a facility-based study funded by the United States Agency for International Development [12].

Other documents were also used, such as the MOH fee lists and drug co-payments list as well as revenue documents from the national health insurance administration, to ensure data consistency and reliability. This

approach of combining data from the Jordanian national health accounts [9] with other sources from nationally representative surveys extends the earlier tradition of benefit–incidence studies to allow a direct comparison of the distribution of public and private expenditures [13].

For the purpose of this study, government spending on HCC was the product of the average unit cost of MOH outpatient centres obtained from the staffing patterns and cost analysis report [12] (adjusted to the inflation rate) and the utilization data obtained from the health care utilization and expenditure survey [11]. The results were compared with corresponding data from the Jordanian national health accounts [9] to ensure consistency and reliability.

### Definitions

Public subsidies for health services were valued as an indirect transfer from the government to households, on condition that households use government services [1]. The unit transfer was calculated as the actual cost to the government of providing the services. These were not valued at the market price of such services but as the net cost to the government, excluding any income the public facilities received from user fees or the insurance premiums paid by the insured in the civil insurance programme.

Outpatient services were defined as all services that involved individuals' contact with health care providers and did not involve an overnight stay. In the current analysis, all outpatient services provided at MOH hospitals were excluded from the benefit–incidence

analysis due to the limited data available on costing and utilization.

Private health expenditure was related to household OOP spending on health, and was defined as all expenditure by households for direct purchasing of medical services or supplies. This definition excluded household expenditure on travel costs and any indirect costs associated with seeking care.

An asset-based wealth index classified the population by economic level based on household assets, amenities and services. This index was utilized as a proxy for household economic status. Five quintiles were developed using principal component analysis, as recommended by the World Bank and Macro International [1]. The 1st wealth quintile denotes the poorest quintile; the 2nd the poor; the 3rd denotes the middle quintile; the 4th stands for the rich quintile and the 5th for the richest quintile. We assumed that an individual within a household had the same wealth quintile as the rest of the household regardless of his/her income, employment status or age.

Targeting efficiency measured the accumulated percentages of benefits received by each wealth quintile.

### Implicit assumptions

Total government spending was taken as the benefit a household or individual received as an in-kind transfer. The value of the service provided was treated similarly to a monetary transfer. During the analysis the average unit cost for MOH HCC was used as a proxy for unit costs across various levels of MOH HCC, assuming no differences in the intensity of

resources used per treatment per episode across population subgroups [1,12].

## Results

### Episodes of illness and health care seeking

The results showed that the poorest quintile in Jordan were more likely to report illness compared to other quintiles (Table 1). An illness was reported by 5.0% of the poorest quintile and 4.4% of the poor, compared with 3.4% of the rich and 2.9% of the richest. They were as likely to seek care as other groups except the middle quintile; 64.0% of the poorest and 59.1% of the poor who reported sickness sought treatment compared with 70.3% in the middle quintile and 62.1% in the richest quintile.

### Distribution of health care utilization

The total utilization pattern in Table 2 illustrates that 54.1% of all outpatient visits in the year 2000 took place at MOH facilities (45.7% at MOH HCC and 8.4% at hospital outpatient clinics), followed by private providers at 36.1%. The MOH HCC were key providers of outpatient services across all quintiles, with the exception of the rich quintile, where the utilization rate of MOH HCC and private providers were similar at 41.9% and 41.8% respectively. Of visits to MOH HCC, 59.1% were from patients in the poorest quintile, 52.6% from the poor, 47.8% from the middle, 41.9% from the rich and 13.5% from the richest.

**Table 1** Prevalence of reporting illness and of seeking health care by individual's wealth index

Health experience	Wealth index					All
	Poorest	Poor	Middle	Rich	Richest	
	%	%	%	%	%	%
Reporting any illness <sup>a</sup>	5.0	4.4	3.7	3.4	2.9	3.9
Seeking medical care <sup>b</sup>	64.0	59.1	70.3	61.8	62.1	63.4

<sup>a</sup>Percentage of individuals reporting any illness within 2 weeks preceding survey; <sup>b</sup>Percentage of individuals seeking care among those who reported illness. Source: Jordan healthcare utilization and expenditure survey, 2000 [11].

**Table 2** Type of health care provider visited by individual's wealth index

Type of provider	Wealth index					
	Poorest %	Poor %	Middle %	Rich %	Richest %	All %
MOH health centre	59.1	52.6	47.8	41.9	13.5	45.7
MOH hospital	8.4	8.3	11.2	7.8	5.0	8.4
Royal Medical Services	5.7	9.0	3.7	6.6	7.5	6.4
NGO	1.8	0.7	0.2	0.3	0.8	0.8
UNRWA	3.4	4.7	2.1	1.6	0.3	2.7
Private	21.5	24.7	35.0	41.8	72.9	36.1

Source: Jordan healthcare utilization and expenditure survey 2000 [11].

MOH = Ministry of Health; NGO = nongovernmental organization; UNRWA = United Nations Relief and Works Agency.

### Distribution of MOH HCC utilization

Of those utilizing MOH HCC, 33.9% were from the poorest quintile compared with 24.4% of the poor, 22.2% the middle, 15.5% the rich and 4.0% the richest quintiles. Figure 1 shows that utilization of MOH centres decreased with increasing wealth, as 46.8% of the uninsured individuals utilizing MOH HCC were in the poorest quintile compared with 15.6% in the middle quintile and 3.3% in the richest quintile.

### Distribution of MOH HCC out-of-pocket expenditure

The result of the financial incidence analysis, illustrated in Table 3, shows that the poorest quintile, especially the poorest uninsured, was the major contributor of OOP expenditure, accounting for 30.8% of all OOP expenditure. For uninsured individuals the percentage contributed from OOP expenses decreased as wealth increased. The analysis illustrates that 62.0% OOP expenditure came from the uninsured. The contributions

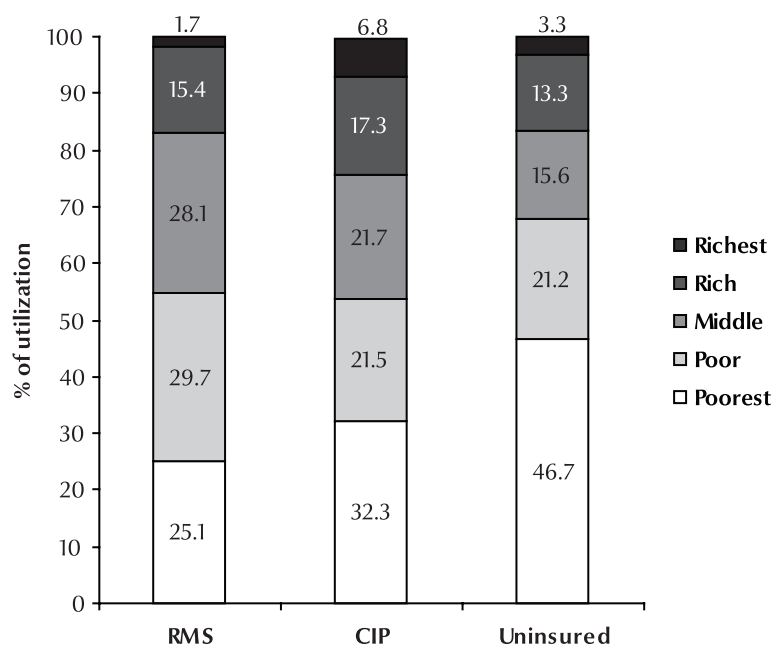
from individuals in the civil insurance programme and Royal Medical Services were 21.4% and 16.7% respectively and, again, OOP contributions decreased as wealth increased.

### Distribution of government subsidy of MOH HCC

Table 4 illustrates that the average in-kind transfer (net government spending) for all quintiles was 80.2%. Disaggregating the in-kind transfer according to wealth quintiles showed that a lower subsidy went to the poorest quintile (75.6%) compared with the other quintiles. Additionally, the proportion of OOP paid by the poorest was higher (24.4%) compared with the middle quintile (16.8%) and the richest (19.6%).

### Benefit-incidence analysis

Table 5 shows the benefit-incidence analysis of government spending on MOH HCC according to individual's wealth quintile and type of insurance. When analysed by quintiles the targeting efficiency (i.e. total percentage of benefits received) demonstrates that individuals in the richest quintile received the lowest subsidy (4.0% of the total benefits), while the poorest quintile received the highest subsidy (33.8% of the total benefits). When analysed by type of insurance coverage, the results suggest that individuals with the civil insurance programme and Royal Medical Services insurance were the most likely



**Figure 1** Utilization of Ministry of Health health care centres by individual's type of insurance coverage and wealth index (RMS = Royal Medical Services, CIP = civil insurance programme)

**Table 3 Out-of-pocket expenditure at Ministry of Health health care centres by individual's type of insurance coverage and wealth index**

Type of insurance coverage	Wealth index					Total
	Poorest	Poor	Middle	Rich	Richest	
	%	%	%	%	%	%
Civil insurance programme	4.3	4.7	5.2	2.3	0.1	4.3
Royal Medical Services	6.5	4.9	4.1	3.5	2.3	6.5
Uninsured	30.8	10.7	9.7	9.4	1.5	30.8

to benefit from the government in-kind subsidy for health (receiving 35.8% and 35.2% of benefits respectively), followed by the uninsured (receiving 28.4%).

Disaggregating the results according to insurance status illustrates that targeting efficiency varied between and within quintiles. For example, in the poor and middle quintiles those with Royal Medical Services insurance benefited most from in-kind transfers for health, followed by individuals in the civil insurance programme and the uninsured respectively. The sub-group of individuals in the poorest quintile who were uninsured received the highest subsidy (13.3%), followed by those in

the poorest quintile who were using the civil insurance programme (11.6%).

### Discussion

The results suggest that, in contrast to what has been documented in other countries, the poorest and poor quintiles in Jordan, who are presumably sicker and in greater need of health services, are able to recognize illness and seek health care regardless of their economic, employment or insurance status [2,8–10,13–16]. This emphasizes the MOH's role as a safety net for the Jordanian poor, especially the poorest quintile, since 67% of the poorest quintile chose and utilized MOH facilities as the first

provider for health care (59% MOH HCC and 8% MOH hospital-based outpatient clinics), while only 22% went to private providers. Additionally, it suggests that the government subsidy to health care made it financially accessible to all by reducing the financial burden shouldered by the poor.

As expected, the poor were more likely than the rich to obtain health care from public facilities, suggesting that public spending on health may matter more to the poor. This result is supported by several studies that suggest that public spending on health care reduces poor–rich differences in access to health care [13–17].

**Table 4 Government subsidy of Ministry of Health health care centres by individual's wealth index**

Payer	Wealth index					All
	Poorest	Poor	Middle	Rich	Richest	
	%	%	%	%	%	%
Government <sup>a</sup>	75.6	83.5	83.2	80.7	80.4	80.2
Household <sup>b</sup>	24.4	16.5	16.8	19.3	19.6	19.8

<sup>a</sup>Based on net government expenditure; <sup>b</sup>Based on out-of-pocket payment.

Sources: Jordan healthcare utilization and expenditure survey 2000 [11]; Rationalizing staffing patterns and cost analysis of primary health services in Jordan, 1999 [12].

**Table 5 Benefit–incidence analysis of government spending at Ministry of Health health care centres, showing targeting efficiency by individual's type of insurance coverage and wealth index**

Type of insurance coverage	Wealth index					Total
	Poorest	Poor	Middle	Rich	Richest	
	%	%	%	%	%	%
Civil insurance programme	11.6	7.8	7.8	6.2	2.4	35.8
Royal Medical Services	8.8	10.5	9.9	5.4	0.6	35.2
Private insurance	0.0	0.0	0.3	0.1	0.0	0.4
Uninsured	13.3	6.0	4.4	3.8	0.9	28.4
Total (targeting efficiency)	33.8	24.3	22.4	15.5	4.0	100.0

Our results show that the MOH HCC provided services to all Jordanians regardless of their insurance status [11]. MOH facilities (HCC and hospital-based outpatient clinics) were the most utilized of the outpatient health care providers, at 54%, followed by the private sector, at 36%. Furthermore, MOH HCC were the main source of outpatient health care services for 46% of those seeking treatment, especially the poorest uninsured.

Moreover, the proportion of public expenditure on health derived from the government was on average 80%, whilst the proportion derived from households (i.e. OOP expense) was on average 20%, ranging from 24% in the poorest quintile to 17% in the poor quintile and 20% in the richest quintile. The variations in private OOP contributions across different wealth quintiles—a conclusion supported by Jordan Public Health Expenditure Review—highlights the regressive pattern in private spending on health [17], indicating the need for a better structure of government financing for health, such as scaling prices to reflect ability to pay (price discrimination), targeting programmes utilized by the poor and geographic targeting especially in rural areas with limited health providers.

It is essential to conduct an in-depth study of the levels of OOP expenditure at MOH facilities to predict the possible impact of any increase in user fees on individuals' care-seeking behaviour. The international literature illustrates that increase in user fees will cause a fall in utilization levels, indicating that health care demand is price elastic. This could be the case in Jordan if the government increased user fees at MOH HCC, since our results show that the poorest uninsured were the main source of revenues for MOH HCC and that MOH HCC were the main source of health care for this group. Additionally, the results of the RAND health insurance experiment, conducted in the USA in the late 1970s, found that "individual's

medical care utilization decisions were influenced by prices" and that "price elasticity increases as the coinsurance rate increases". Moreover, demand for acute care and inpatient services were found to be less sensitive to price than chronic care and outpatient care [18,19].

Another area to be considered is the effect of such increases on the private sector. International research examining the effect of increasing public health care fees illustrated that an increase in public fees was more likely to reduce utilization; some patients might switch to other providers, while others would use self-treatment [20,21]. Additionally, the increase in demand on private sector services resulting from higher fees in the public sector may result in higher fees in the private sector, as illustrated by the Indonesian experience, and therefore limit the ability of the poor to access health care services when needed [22].

Our results demonstrate that a greater proportion of benefits to those utilizing the MOH HCC was enjoyed by the poorest quintile. The targeting efficiency illustrated that 34% of resources allocated to health were received by the poorest quintile, 24% by the poor, 22% by the third quintile, 16% by the rich and 4% by the richest quintile. This strongly suggests that public expenditure for MOH HCC is targeting the poor and other disadvantaged groups effectively.

International experience demonstrates that there are real returns from public subsidies in terms of health outcomes. This can be seen in Jordan, where health indicators are considered among the 10 best in the Middle East/North Africa region. Therefore, any attempt to lower subsidies by increasing user fees may have negative health consequences, bearing in mind that MOH HCC are the main health care services for the poorest uninsured quintile in the northern and southern regions of the country [authors' analysis, data not

included]. Additionally, international experience demonstrates the elasticity of outpatient visits. If the MOH chooses to increase fees then "unless the freed subsidies are allocated to more efficacious programmes, health outcomes may deteriorate" [23]. Furthermore, if the suggested increase in user fees is used to generate revenues to improve the quality and access to curative care (as suggested by the MOH), and if the wealthy are willing to pay the full cost of service improvement, but the poor are not, then this policy could lead to reallocation of public subsidies from the poor to the wealthy. Thus, any increase in user fees would become a financial barrier to the poor and reduce their access to care [22].

A remedy for lack of collaboration between the MOH and the private sector needs to be debated by policy-makers, especially in rural areas where the MOH is the main provider of health. There is a window of opportunity to build public-private partnerships by enabling the private sector to contract with the MOH to provide services to their employees, especially in rural areas. This could be a realistic option to increase MOH revenues, and reduce unit costs especially for village health units.

Finally, this paper calls for extreme caution in adopting some of the health care reform packages implemented in other countries, and indicates the urgent need to draw lessons from other countries' experiences during the design and implementation phases of health sector reform in Jordan.

### Study limitations

The analysis did not take into consideration the "intensity" of services at different facilities, and thus underestimated the administrative costs, which might result in a biased analysis and hide the inefficiency of the system.

Some concerns have been raised recently regarding the use of principle component analysis in measuring the

wealth index as recommended by the World Bank. These concerns are related to the relative position of households in the national wealth hierarchy, which varies to a great extent based on the asset index used and time period studied. There is a chance that the way in which economic status is defined might have influenced the magnitude of poor–rich differences in health and

health-related outcomes [24,25]. Our data used a question about the first contact with health providers in case of illness and seeking care; as a result the study did not capture the utilization volume. Given the limitation of the data available and the implicit assumptions behind the benefit–incidence analysis, the results should therefore be considered with care.

## Acknowledgements

The authors thank the Social Research Center at the American University in Cairo for making the analysis possible through the research fellowship provided to the first author. The views expressed in this paper are solely those of the authors and any errors or omissions are entirely theirs.

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