

Introducing Co-payment for Consultant Specialist Services

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Abstract

Background: Full medical coverage may often result in overuse. Cost-sharing and the introduction of a co-payment have been shown to cause a reduction in the use of medical services.

Objectives: To assess the effects of the recently introduced co-payment for consultant specialist services on patient utilization of these services in southern Israel.

Methods: Computerized utilization data on specialist services for 6 months before and 6 months after initiation of co-payment were retrieved from the database of Israel's largest health management organization.

Results: A decrease of 4.5% was found in the total number of visits to Soroka Medical Center outpatient clinics and 6.8% to community-based consultants. An increase of 20.1% was noted in the number of non-actualized visits to the outpatient clinics. A decrease of 6.2% in new visits to hospital outpatient clinics and 6.5% to community clinics was found. A logistic regression model showed that the residents of development towns and people aged 75+ and 12–34 were more likely not to keep a prescheduled appointment.

Conclusion: After introduction of a modest co-payment, a decrease in the total number of visits to specialists with an increase in “no-shows” was observed. The logistic regression model suggests that people of lower socioeconomic status are more likely not to keep a prescheduled appointment.

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Full medical coverage may often result in over-use [1]. This phenomenon (lack of linkage between service and payment) is commonly termed “moral hazard” in the literature; it results in more use of services, inappropriate over-use, and may be the cause of significant “overload” of services and expenses on a national scale. One of the strategies for preventing over-utilization is sharing costs with the patients through a system of co-payment [2]. Cost-sharing and the introduction of a co-payment have been shown to cause a reduction in the use of outpatient services [1,3-5]. In the Rand controlled trial the self-participation group used 20% less health services [1,6-8]; on the other hand, this sort of incentive has been shown to reduce the appropriate use of services as well [6].

For employed populations small co-payments appear to have little impact on most of the valuable types of preventive care

services [8]. Co-payments have a similar effect on higher and lower income members of the health management organizations [9]. Selby et al. [10] showed that the introduction of a small co-payment for emergency department use was associated with a decline of about 15%, mostly among patients with conditions considered likely not to present an emergency. Mental health outpatient visits also declined following the introduction of co-payments, which further restricted access regardless of clinical need [11].

In Israel, a study examining the effects of a prolonged physicians' strike found that financial constraints were the most frequently cited reason for not utilizing services [12]. In another study conducted in 1988 it was stated that the effect of a possible co-payment on the number of office visits for primary care physicians would be negligible [13].

Maccabi Health Services, one of the four HMOs in Israel, introduced co-payment for specialist services and primary care physicians in 1983. Frequency of first visits to all physicians per quarter decreased by 12% on average and visits to primary care physicians decreased by almost 16% after introduction of the co-payment [14].

A health services utilization study [15] of 5738 households in 1993 showed differences in visit rates to primary care physicians among patients belonging to two different HMOs. The visit rate of members was higher in Clalit Health Services (with no co-payment) compared to Maccabi (existing co-payment) for the over 45 year old group, and lower for the younger age groups.

In November 1998, as a result of the recent amendments to the National Health Insurance Law, Clalit Health Services introduced co-payment for the use of hospital outpatient clinic specialist consultation. In February 1999, co-payment for community-based specialist consultants (excluding pediatricians and gynecologists) was also introduced.

In the Negev (the southern region of Israel), the population distribution in terms of socioeconomic variables suggests that they are more likely to be affected by such changes [16]. Furthermore, according to the socioeconomic and sociodemo-

HMO = health management organization

graphic ranking of local municipalities in Israel, which is based on the standardization of economic and social data computed by the Bureau of Statistics, the majority of municipalities in southern Israel are located in the lower clusters [17]. The aim of the present study was to examine whether the introduction of an obligatory quarterly flat payment for consultant services affected utilization of these services in the Negev population.

Methods

The Israeli health system comprises four HMOs. At the time of the study, 60% of the Israeli population was insured at Clalit (the largest HMO). Until 1995, HMO members paid an income-related premium (with various exceptions) to the HMO in order to receive health services. In 1995 the National Health Insurance Law was passed, and currently citizens pay a progressive tax to the Social Security Institute that allocates the funds to the HMOs according to a capitation formula. At the time of the study, Clalit provided health services to over 430,000 people in the southern district, approximately 60% of the population in southern Israel.

The specific objectives of the study were as follows: a) To compare patterns of visits to specialist services in the community and in the hospital outpatient clinics (Soroka Medical Center) before and after the introduction of co-payment. All hospital patients belonged to one of the four HMOs and community patients included only Clalit members. b) To compare patterns of visits to specialist services before and after the introduction of co-payment in more "chronic" specialty areas (cardiology, neurology, hypertension, diabetes) compared to more "acute" specialty areas (ear-nose-throat, orthopedics, dermatology, ophthalmology), and to compare patterns of visits to specialists' services before and after introduction of the co-payment between self-referral specialty areas (ENT, ophthalmology, dermatology) and physician referral specialty areas.

The setting of the study was the outpatient clinics of Soroka Medical Center and specialist community clinics in the specialty areas of ENT, Dermatology, Ophthalmology, Orthopedics, Cardiology, Neurology, Hypertension, and Diabetes. The total number of visits to these clinics was 32,845 before co-payment and 31,372 after co-payment. The total number of visits to the community specialists' clinic was 128,202 before co-payment and 119,527 after.

The co-payment was set at \$4.4 for a hospital consultation referral and \$2.2 for a community specialist consultation – both for a predetermined yearly quarter. According to the Law, the maximum amount per family per yearly quarter that can be charged for specialty services is \$26.6. Patients with specific chronic diseases or members receiving income supplementation from Social Security are automatically excluded from co-payment. In addition, members over 65 years old or new immigrants (less than 12 months in the country) pay significantly less.

Utilization data of specialist services 6 months prior to and 6 months following the introduction of co-payment (March to September 1998 and 1999) were retrieved from the computerized

databases of the outpatient clinics of Soroka Medical Center and the Clalit community specialist clinic. The variables were whether the visit was prescheduled, whether the prescheduled appointment was kept, and whether it was a new visit for the quarter.

Statistical analysis

The data were analyzed using SPSS software. Logistic regression analysis was performed (confidence interval for exp(B) 95%) in order to estimate which explaining variables can significantly predict the subpopulation that will not keep prescheduled appointments.

Results

Hospital outpatient clinics

- *Changes in visits pattern:* After the initiation of co-payment a decrease of 4.5% (n=1473) was observed in the total number of visits to Soroka outpatient clinics. We also observed a decrease of 10.1% (n=691) in the number of "walk-ins," a 6.2% (n=1307) decrease in new visits and an increase of 20.1% (n=1761) in the number of appointments not kept ("no-shows") [Figure 1].
- *Chronic vs. acute specialty areas:* Mainly, we observed more no-shows in chronic specialty areas (cardiology, neurology, hypertension, diabetes) and fewer walk-ins in acute specialty areas) ENT, orthopedics, dermatology, ophthalmology). Patients referred to more chronic specialty areas had a higher decrease in total visits [8.5% (n=973) vs. 2.3% (n=500)] and in new visits [10.7% (n=974) vs. 2.8% (n=333)], and a higher increase in no-shows [23.6% (n=747) vs. 18.2% (n=333)]. Patients referred to more acute specialty areas had a higher decrease in walk-ins [12.5% (n=567) vs. 5.4% (n=124)] [Figure 2].
- *Logistic regression:* A logistic regression model showed that patients who were more likely to not keep a prescheduled appointment were residents of development towns (odds ratio = 1.456, 95% confidence interval 1.156–1.834). Patients

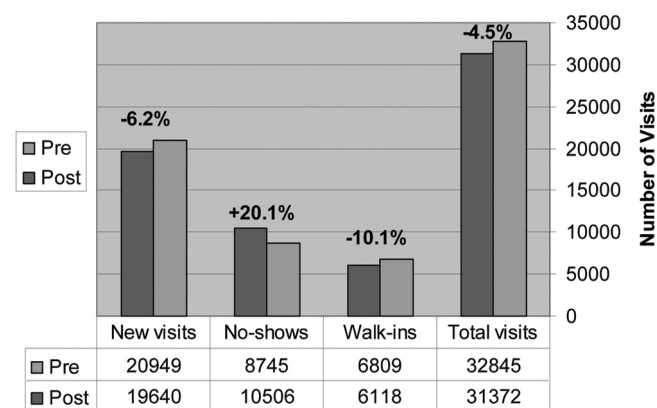


Figure 1. Changes in visit patterns to outpatient hospital-based clinics: March to September 1998 and 1999

ENT = ear, nose and throat

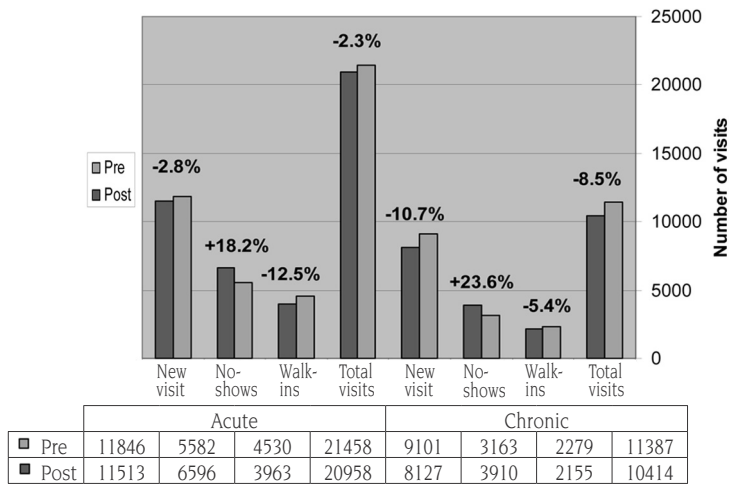


Figure 2. Chronic vs. more acute specialty areas at outpatient hospital-based clinics. Chronic specialty areas: cardiology, neurology, hypertension and diabetes; acute specialty areas: ENT, orthopedics, dermatology and ophthalmology

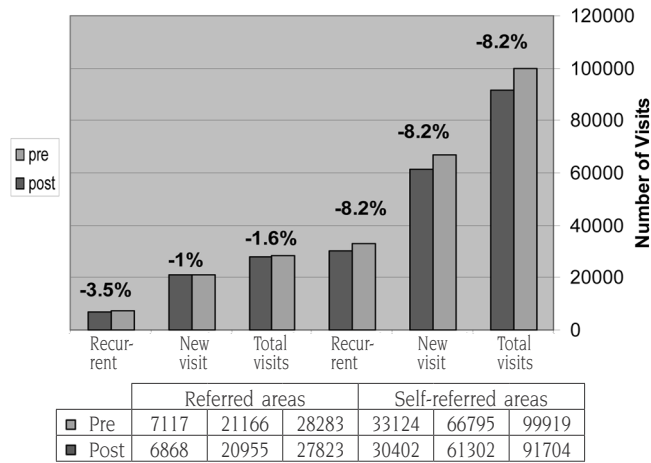


Figure 3. Self-referred vs. referred specialty areas at community clinics. Self-referral specialty areas: ENT, ophthalmology, dermatology

who were more likely to keep a prescheduled appointment were those aged 55–64 (OR = 0.8, 95% CI 0.666–0.962), residents of higher socioeconomic towns (Omer, Lehavim, Mitar) (OR = 0.748, 95% CI 0.598–0.936), and residents of a kibbutz (OR = 0.578, 95% CI 0.454–0.735). Gender was not found to be a significant variable [Table 1].

Community-based specialists

- *Changes in visits pattern:* After the initiation of co-payment a decrease of 6.8% (n=8675) was observed in the total number of visits (actualized visits) to community clinics. Unfortunately, there were no data on unplanned visits (walk-ins) and appointments not kept. In Clalit community clinics there was a 6.5% decrease (n=5704) in new visits.

Table 1. Logistic regression model results for predicting the people who will not keep prescheduled visits to specialists in outpatient clinics

0	Odds ratio	95% CI	P
Gender			
Male	1		NS
Female			
Age (yrs)			
0–11	1		
12–17	1.017	0.842–1.230	
18–34	1.005	0.867–1.166	
35–44	0.96	0.815–1.130	
45–54	0.933	0.785–1.108	
55–64	0.8	0.666–0.962	< 0.05
65–74	0.858	0.714–1.030	
75+	1.083	0.895–1.310	
Residence			
Bedouin or Moslem settlement	1		
Moshav (cooperative settlement)/village	1.008	0.846–1.201	
Omer/Lehavim/Mitar	0.748	0.598–0.936	< 0.05
Beer Sheva	0.909	0.804–1.029	
Development towns	1.456	1.156–1.834	< 0.001
Other cities in southern district	1.076	0.942–1.229	
Kibbutz	0.578	0.454–0.735	< 0.0001
Settlements outside the southern district	1.156	0.912–1.465	
Country of birth			
Israel	1		
East Europe and former USSR	0.956	0.845–1.083	
Asia/Africa	0.977	0.857–1.115	
Middle East	0.833	0.676–1.027	
West Europe, North America, North Africa, Australia and New Zealand	0.601	0.431–0.838	< 0.05
South America	0.763	0.559–1.041	
Ethiopia	0.959	0.677–1.358	
HMO			
Macabbi, Leumit, Meuhedet	1		
Clalit	66.972	30.009–149.463	< 0.0001
Time of setting the appointment			
Before the initiation of co-payment	1		
After the initiation of co-payment	0.904	0.839–0.975	< 0.0001
Before and after the initiation of co-payment	0.086	0.071–0.105	< 0.0001
Specialty area for which appointment was made			
Chronic	1		
Acute	0.756	0.696–0.820	< 0.0001
Chronic and acute	0.229	0.161–0.327	< 0.0001

- *Chronic vs. acute specialty areas:* In the comparison between more acute and more chronic specialty areas at the community clinics, differences were found only in more acute specialty areas where a decrease of 7.3% (n=8579) in total visits and of 7.1% (n=5703) in new visits was found.
- *Self-referred vs. physician-referred specialty areas:* A decrease of 8.2% (n=8215) in the total number of visits (appointments kept) to self-referral specialty areas compared to physician-referred specialty areas, 1.6% (n=460), was noted. This trend was seen also in the number of new visits, a decrease of 8.2% (n=5493) in new visits to self-referral specialty areas

OR = odds ratio
CI = confidence interval

vs. a decrease of only 1.0% (n=211) in new visits to referred specialty areas [Figure 3].

Discussion

The inappropriate use of medical services is a problem that exists in any medical system. The main purpose of this study was to examine whether the introduction of an obligatory quarterly flat payment for consultant services will affect utilization of these services in the southern Israel population. We indeed found a reduction in the utilization of consultant services. A decrease of 4.5% was observed in the total number of visits to Soroka Medical Center outpatient clinics and 6.8% to community clinics. This reduction was observed in spite of a 2.8% increase in members to Clalit Health Services during that period, after the initiation of co-payment. We also observed a decrease of 10.1% in the number of walk-ins, suggesting co-payment as a deterrent. Other studies [18-23] – despite the fact that they were carried out in populations with different age, gender, socioeconomic and health status, and different methods and amounts of payments – show a substantial decrease in the number of visits after co-payment was introduced. In Europe the reduction in the rate of visits was temporary and returned to its former level after a certain period [23,24].

Important parameters that indicate the extent of influence of the co-payment on keeping the prescheduled appointment was the number of appointments not kept and the number of new visits; co-payment for a visit was for the first (new) visit, while return visits within a yearly quarter did not require co-payment. We found an increase of 20.1% in the number of non-kept visits to Soroka outpatient clinics. We also found a decrease in the number of new visits to Soroka outpatient clinics (6.2%) and to Clalit community clinics (6.5%). Similar results were found in a study conducted in another Israeli HMO (Maccabi) where an average decrease of 12% per quarter was found in the number of new visits [14].

With regard to the differences in the influence of co-payment between acute and chronic specialty areas, we found a twofold decrease in walk-ins of patients referred to acute specialty areas in Soroka outpatient clinics compared to more chronic specialty areas. In contrast, patients referred to more chronic specialty areas had a higher decrease in total visits and in new visits and a higher increase in no-shows. In the community clinics, there was a decline in total visits and new visits only in the more acute areas. This finding may represent the effect of urgency and of demand flexibility on utilization. It should be noted that a decrease in chronic disease follow-up may result in long-term damage.

We also found that self-referred specialty areas were affected immediately after the initiation of co-payment. A decrease of 8.2% was seen in total visits for self-referred areas (ENT, ophthalmology, dermatology) and only 1.6% in physician-referred specialty areas. A similar trend was seen in new visits as well. This finding is also suggestive of an effect on demand flexibility.

Moreover, patients in lower socioeconomic groups were more affected by co-payment. It was interesting to examine

the introduction of a previously absent co-payment in different subgroups of the population with different sociodemographic conditions. One of the study hypotheses was that co-payment will have a stronger effect on elderly members who usually utilize more health services and that it would not affect the consumption by children. Logistic regression results show that a greater chance for no-show at Soroka was found among residents of rural settlements, those insured by Clalit, and people aged over 75 or 12–34. Apart from the 12–34 age group, all other subgroups were more likely to be in a lower socioeconomic group.

Medical care free of co-payment has been shown to significantly benefit people of low income with well-established preexisting medical conditions [7]. Furthermore, the introduction of a co-payment into a system that was traditionally without co-payment may cause under-use of services in the lower socioeconomic group [25]. The effect of co-payment as a negative incentive seems to be inversely related to the urgency of the medical problem [10]. The logistic regression analysis suggested that lower income populations are more affected by co-payment. Although the co-payment in this study was relatively low compared to other studies, it still had a stronger impact on some of the population.

Some limitations of the study are inherent in the study structure: the study did not include a control group for patients visiting the specialists in the community; level of income was not examined; there were some differences between the hospital and community database structure; and the analysis included only the relatively recent period after the initiation of co-payment.

As observed in other studies, it is reasonable to expect the effect observed in this study to be temporary and short term. Therefore, a controlled prospective study was carried out to examine the exact impact of co-payment on actualization of visits, and patient's attitudes to the change (during the period 2001–2002). The prospective phase of the study examined visit patterns, interviews with patients regarding reasons for not keeping the appointments, opinions regarding co-payment, and interviews with physicians regarding attitudes towards co-payment.

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