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Effects of changes in copayment for obstetric emergency room visits on the utilization of obstetric emergency rooms

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ABSTRACT

In view of the growing proportion of "non-urgent" admissions to obstetric emergency rooms (OERs) and recent changes in copayment policies for OER visits in Israel, we assessed factors contributing to OER overcrowding. The changes investigated were (a) exemption from copayment for women with birth contractions, (b) allowing phone referrals to the OER and (c) exemption from copayment during primary care clinic closing hours.

We analyzed data of a large tertiary hospital with 37 deliveries per day. Counts of women discharged to home from the OER were an indicator of "non-urgent" visits.

The annual number of non-urgent visits increased at a higher rate (3.4%) than the natural increase in deliveries (2.1%). Exemption from copayment for visits during non-working hours of primary care clinics was associated with increases in OER admissions (IRR = 1.22) and in non-urgent OER visits (IRR = 1.54). Younger and first-time mothers with medically unjustified complaints were more likely to be discharged to home.

We showed that the changes in the policy for OER copayment meant to attract new clients to the HMO had an independent impact on OER utilization, and hence, added to the workload of medical personnel. The change in HMO policy regulating OER availability requires rigorous assessment of possible health system implications.

1. Background

The phenomenon of overcrowded emergency rooms (ERs) is a universal problem found in both high- and low-income countries [1–6]. A growth in the demand for emergency medical services is usually produced by the "inappropriate use" of emergency medical services for non-urgent visits [7], and it is typically of a multifactorial nature [6,8]. Overcrowded ERs are associated with increased costs and workload [9], disruption in the continuity of care, and the difficulty of meeting the workload with the manpower available, the last of which may compromise the quality of care in true emergencies and lead to adverse events [7,9]. Indeed, it has been shown that nurses who work more than 40 h per week make more frequent critical mistakes [10].

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During pregnancy and childbirth, routine prenatal management is usually provided by primary health care services, while the range of potentially life-threatening complications may require management and skills that are only available in the obstetric emergency room (OER). A well-functioning referral system to OER, therefore, is crucial to ensure that patients receive appropriate and timely maternal and prenatal care [11,12]. However, concerned pregnant women will often self-refer to the facilities, even in the absence of a threatening obstetric condition [13], depending on availability of transportation, perceived benefit of treatment in the hospital, quality of care and severity of the condition along with demographic characteristics [7,11,14].

Trends in OER referrals may be attributed to several political, legal and financial issues, such as government support and national resource allocation [15]. Thus, according to the Israeli Ministry of Health report (2009–2011), the admissions rate in OERs in Israel was 47 per 1000 women, while the proportion of women discharged to home was as high as 48% [16]. Admissions were higher in peripheral regions, where they are affected by HMO policy, accessibility, socio-demographic characteristics of the population [16] and health services consumption habits among the population. Two studies showed a higher utilization of ERs by Arab–Bedouin compared to Jewish members of the population [17,18]. This outcome may be explained by the patient contacting a health care provider in an advanced stage of disease, poor communication with the primary physician, greater patient confidence in the ER medical staff, low accessibility of primary care services, and low education level [17–19].

Health care in Israel is universal, and as defined by the National Health Insurance Law of 1995, all citizens are entitled to medical insurance and health care from one of the four Health Maintenance Organizations (HMO). The only precondition for receiving such coverage is registration with one of the HMOs, which provide uniform benefits packages (covering all basic and essential care needs) and which receive funding from the National Insurance Institute based on the number of insured patients and their age, sex and geographical location. Among the four HMOs in Israel (Clalit, Maccabi, Meuhedet and Leumit), the majority of the Israeli population is registered with Clalit, whose coverage is as high as 50–70% in some districts in the country. Although policy makers anticipated that the financing mechanism implemented through the National Health Insurance Law would encourage competition between the HMOs for clients (which it did), it was also designed to render the HMOs indifferent to the socio-demographic features of their members, a goal whose success has been questionable [20].

During the period of 2007–2010, the four Israeli HMOs instituted new regulations for OER copayment in attempts to recruit more members. Traditionally, regardless of HMO affiliation, the patient has been required to pay for an OER visit that did not end in delivery unless he/she received a formal referral from a medical practitioner. Under such circumstances, however, patients who have a perceived need for medical attention but who lack the necessary referral may be less likely to seek help if they know they will be charged for the visit. To address this problem, the Clalit HMO, for example, introduced three specific changes in 2009 and 2010: (a) exemption from copayment for women with birth contractions, (b) introduction of "Clalit CALL", a phone service for OER referral, and (c) exemption from copayment outside of primary care clinic working hours during primary care clinic off hours. Similar changes were also adopted by the other three Israeli HMOs.

While intended to attract clients to the HMO, such changes in copayment may have also increased the numbers of visits to OERs, especially for issues considered "inappropriate use" of OER services. We therefore aimed to describe the effect of the recent changes in copayment on the number of OER admissions and the proportion of visits that ended in discharge to home, the latter of which could be considered inappropriate or non-urgent use of OERs. We hypothesized that the changes in copayment introduced by the Israeli HMOs have had an independent impact on the OER. To test this hypothesis, we examined the OER at Soroka University Medical Center (SUMC), a tertiary medical center in Beer-Sheva that provides obstetrical services to the entire population of southern Israel and that has been coping with growing numbers of OER admissions each year.

2. Methods

2.1. Population

We investigated all admittances of pregnant women beyond 22 weeks of gestation to the SUMC OER during the period of January 2006 to December 2011 on the basis a formal referral from a primary medical care provider or as a result of an independent decision of the women. The investigation was limited to women insured by Clalit, one of the largest HMOs in Israel with 70% coverage in the south of the country.

2.2. Data

We used the Admission-Transfer-Discharge (ATD) computerized system of SUMC for the information about the visit to OER and the subsequent delivery at the end of pregnancy during the period of 2006–2011

2.3. Variables

A non-urgent OER visit was the main dependent variable in the analysis, and was defined as a visit followed by discharge to home, which could potentially indicate an inappropriate use of OER. We also predicted the overall count of OER visits where relevant.

The analysis focused on two levels of data collection: (1) aggregated daily counts of the number of OER visits and (2) each individual visit of a pregnant woman to ER.

The main dependent outcome in the *first approach* was daily counts of non-urgent and overall OER visits. The independent variables included the three periods of time that followed the main changes in copayment, as defined earlier in the text: (a) January–May 2009, (b) June–December 2009 and (c) after January 2010. We adjusted the analysis to time trend (defined as consecutive days of the study