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## **Supplier inducement in a public health care system: The case of cesarean delivery**

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### **Objectivos (Objectives):**

The present paper evaluates whether a change in the juridical nature of hospitals that forced them into being results-oriented institutions led to the inducement of cesarean section procedures. We show that these hospitals were more likely to perform a cesarean in Portugal, and that they also had a higher decrease in the average length of stay for mothers that were subject to cesarean.

### **Metodologia (Methodology):**

The data for this study was drawn from two sources. The primary data was extracted from a database of ACSS and covers deliveries in 44 hospitals belonging to the National Health System (NHS). These 44 hospitals include 21 that were turned into enterprise hospitals (EPE) in late 2002 and 3 more by the end of 2005; the other hospitals remained state-owned public hospitals with old management rules (SPA). These data include all discharges who were admitted to the hospital with uncomplicated diagnoses of childbirth over the period 1996-2006 and it contains 847106 records. This data was complimented with additional data on the fecundity rate and the number of physicians (obstetricians/gynecologists) by municipality provided by the National Statistical Institute.

We ran logit models to estimate the probability that a baby is born through a cesarean versus vaginal delivery. We also employed Poisson and zero-inflated Poisson models to test the hypothesis that for hospitals that changed into enterprises the maternal length of stay after cesarean delivery decreases.

### **Resultados (Results):**

We find evidence of supplier inducement for two groups of hospitals that transformed into enterprises. In particular, hospitals that changed their enterprise status in 2002 had a 1.1 percentage point higher likelihood of performing cesarean delivery when compared to the SPA hospital group. The group that changed to an enterprise in 2005 was 4.7 percentage points more likely to have cesarean births when compared to the SPA hospital group. We also found that the maternal length of stay, after cesarean delivery, in relation to the average by year decreased by 3.6 (10.9) percentage points in hospitals that changed their status in 2002 (2005) in relation to the SPA group.

### **Conclusões (Conclusions):**

We use a novel approach for the inducement literature focusing on the hospital level. Even without individual incentives, we conclude that the management of an organization can put

pressure on individual doctors to perform different procedures. Our results have important implications for public health policy in Portugal. We observe that in spite of economic incentives to prefer cesarean section delivery under the DRG programme, providers increasingly did cesarean sections. The goal of the efficiency through by reducing the length of stay in case of cesarean delivery, our calculations suggest that the reform had a good impact.