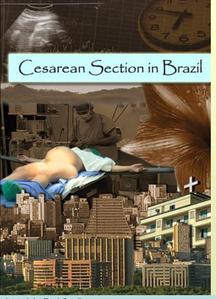


Artwork by Traci Goudi

# THE ROLE OF NONCLINICAL FACTORS IN CESAREAN SECTION RATES IN BRAZIL

**Kristine Hopkins** (khopkins@prc.utexas.edu) and **Ernesto Amaral** (amaral@prc.utexas.edu)
**Population Research Center, University of Texas at Austin**

## WHAT IS THE PROBLEM?

- Cesarean rate in Brazil is nearly 40% – one of the highest rates in the world.
- World Health Organization says a safe rate is around 15%.
- Rates **high** in public hospitals – about 25%; **extremely high** in private hospitals – over 70%.
- 64% of all cesareans in private hospitals are scheduled before being admitted to the hospital.

### WHO IS RESPONSIBLE FOR THESE HIGH RATES?

- **Is it the women?** Do rich women choose cesarean because they want to avoid natural childbirth?
  — Evidence shows that the majority of Brazilian women prefer to deliver vaginally, and that there are no differences in preferences between women in public or private hospitals.
- **Is it the doctors?** How do doctors benefit from performing cesareans over vaginal births?
  — Doctors spend less time performing cesareans.
  — Doctors' time is precious – many work in both the public and private sectors.
- **Is it the organization of hospital care?**
  — Private hospitals subject doctors to few regulations and little oversight.
  — Public hospital rates have come down since the federal government imposed a reimbursement ceiling – they will not reimburse hospitals over a certain total percentage of cesareans.

### CLINICAL VS. NONCLINICAL FACTORS

- Cesarean section can be a lifesaving procedure for woman and/or baby (clinical factors).
- Nonclinical factors: woman's income level (positive); education level (positive); onset of prenatal care (positive); insurance coverage; hospital type; payment status.
- Expectation: poorer women – who have poorer health and who have less access to quality health care – will have higher cesarean section rates compared to well-insured, healthier, higher income women.
- The opposite is true: ***The best off women in Brazil are the ones most to deliver by cesarean.***

## THE QUESTION

- Do women with higher incomes and higher education levels deliver by cesarean because of their *socioeconomic characteristics*, or because their status affords them the chance to give birth in a *private hospital*?

## METHODS

In order to explore the relative relationship of women's individual characteristics and the type of hospital where she delivered on cesarean section rates, we use the 1998 Brazilian household survey known as the *Pesquisa Nacional da Amostra Domiciliar*, or PNAD.

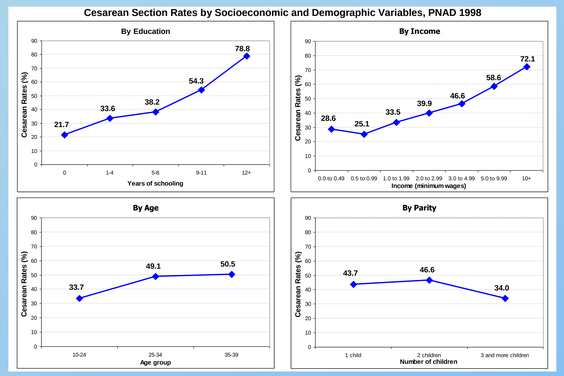
— N=484 (women who had a birth in the previous year).

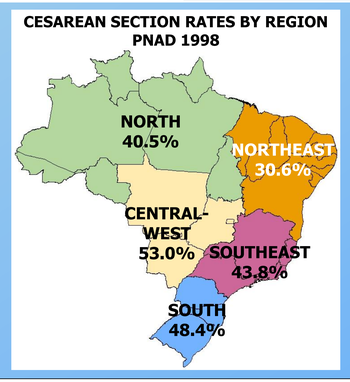
— Descriptive results and logistic regression to predict the odds of delivering by cesarean.

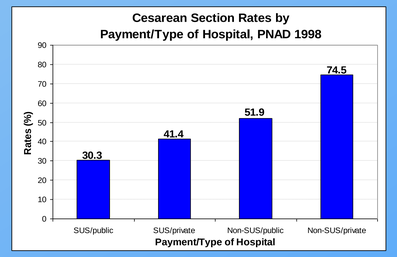
## RESULTS

### UNADJUSTED CESAREAN SECTION RATES

- Strongly positive for education, income, and type of hospital.
- Weak positive association with age.
- Variations by region and parity.



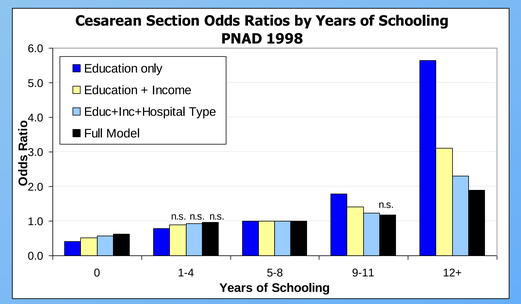

**A Note on Brazilian Health Care Financing**

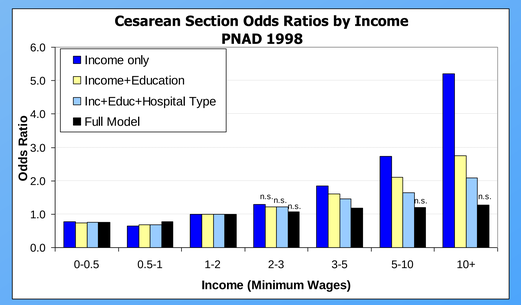
SUS = *Sistema Unificado de Saúde* (Unified Health System), established in 1988; receives financing directly from federal and local governments.
SUS pays for care in both public and private hospitals BUT SUS is NOT accepted in all hospitals. Some public hospital beds set aside for private health insurance payments.

- "SUS/public" = government financing in public hospitals
- "SUS/private" = government financing in private hospitals
- "Non-SUS/public" = private financing (health insurance or out-of-pocket) in public hospitals
- "Non-SUS/private" = private financing in private hospitals

### ADJUSTED CESAREAN SECTION RATES

- Introducing income and education into the same model to predict the odds that a Brazilian woman will deliver by cesarean reduces the main effects for high status women.
- After introducing of type of hospital, the main effect is reduced even more, particularly for income.
- These results suggests that rich, well-educated women deliver by cesarean not so much because of their individual characteristics but because of where they deliver their babies.
- Unfortunately, we did not have a measure of sterilization, which we know to have a strong impact on the cesarean rate, especially in the private sector.




Note: "Full model" = education, income, hospital type, age, parity, and region.

**→ Where a women delivers is the strongest predictor of whether or not it will be a cesarean delivery, regardless of her individual characteristics.**

## ORGANIZATION OF HOSPITAL CARE & CHILDBIRTH

### PRIVATE HOSPITALS ARE SET UP TO FAVOR CESAREAN SECTION

- Since private obstetricians typically do not work in teams, when a woman enters into labor during working hours, the doctor typically has to cancel all private clinic appointments in order to attend her labor.
- Since many doctors work multiple jobs in multiple sites, a call to attend labor can be additionally problematic.
  - For example: an OB who works two 12-hour shifts per week at a public hospital and two 6-hour morning shifts at a public health clinic, in addition to seeing her private patients in the afternoons, has strong incentives to schedule cesarean deliveries.
- Scheduling cesarean deliveries minimizes professional and personal life disruptions and maximizes an obstetrician's ability to see more private patients.

### PUBLIC HOSPITALS ARE SET UP TO FAVOR VAGINAL DELIVERY

- Shift system – OB required to stay in the obstetrics ward to attend any patient that happens to be there.
- Some hospitals have medical support staff – medical students, obstetrical residents, or nurse-midwives – to evaluate patients during the evolution of labor.
- Staff obstetricians are (only) called in to consult on more complicated cases.
- In many cases, the medical support staff, not staff doctors, attends vaginal deliveries.

## POLICY IMPLICATIONS

**Policies that attempt to bring down the cesarean rate in Brazil will need to focus less on women's characteristics and more on the structural conditions in which Brazilian women give birth.**

- Target cesarean reduction interventions toward:
  — Doctors who attend deliveries in private hospitals &
  — Health insurance companies that reimburse doctors for those deliveries.
- Introducing use of private group practices could relieve some of the time pressures obstetricians face.
- Introducing a cap on the proportion of cesarean deliveries health insurance companies will reimburse for any one doctor could provide a strong disincentive to perform unnecessary cesareans that women do not want.

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