

Letters to the Editor

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Public Housing Subsidies May Improve Poor Children's Nutrition

Poor families are increasingly unable to afford basic necessities. Even with maximal participation, food assistance programs cover only 34 to 66% of food costs for families in Boston, Mass.¹ Housing costs may limit the food budget of these families: in Boston, 63% of Aid to Families with Dependent Children recipients spend over 75% of their grant on rent.¹ However, tenants who receive public rent subsidies spend only 25 to 30% of their income on rent. We performed a pilot study to test the hypothesis that nutritional status is better among low income children whose families receive public housing subsidies compared with similar children whose families do not, presumably reflecting a reduced pressure on family food budgets.

We reviewed height, weight, and hematologic data from all children between the ages of 6 months and 6 years attending

the Pediatric Primary Care Clinic, Boston City Hospital, for health maintenance visits from October 1989 through April 1990. This clinic serves a predominantly low-income minority population. Demographic data (age, sex, race, parent's name, address, method of payment) were collected from the hospital's registration system. Based on the parent's name and address, the Boston Housing Authority and the Metropolitan Housing Authority classified the families as either receiving public housing subsidies or not and supplied these data in an anonymous fashion.

Data were collected from 580 consecutive children. Ninety-six percent were minority, and 79% were either insured by Medicaid or were without insurance. There were no significant differences in z scores for height-for-age, weight-for-height, or weight-for-age between children in subsidized and nonsubsidized housing. Hematologic data were available for 503 children; 142 (28%) were iron deficient as defined by hemoglobin or hematocrit levels—below Centers for Disease Control cutoff values² or an erythrocyte protoporphyrin level 35 mcg/dl or greater with a lead level less than 25 mcg/dl.³ Nineteen percent of children whose families were classified as receiving housing subsidies were iron deficient, compared with 30% of children whose families were not so classified ($P = 0.055$). Logistic regression analysis showed that a lack of housing subsidy contributed to a risk of anemia at a marginal level of significance (odds ratio = 1.8; 95% confidence interval = 0.95, 3.39; $P = 0.0695$).

While this was a retrospective pilot study in which a limited number of variables were examined and housing status could not be verified, these findings suggest that subsidized housing may protect low income children against iron deficiency. Providers of health care for poor

US children should be aware of the ongoing high prevalence of iron deficiency in some populations, especially for those with excessive housing costs. Future population-based nutritional surveys should include questions regarding housing subsidies. □

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References

1. Wiecha JL, Palombo R. Multiple program participation: comparison of nutrition and food assistance program benefits with food costs in Boston, Massachusetts. *Am J Public Health*. 1989;79:591-594.
2. Centers for Disease Control. CDC criteria for anemia in children and childbearing-aged women. *MMWR*. 1989;38:400-404.
3. Centers for Disease Control. Preventing lead poisoning in young children. Atlanta, Ga: US Dept of Health and Human Services; January 1985.

The Effect of Previous Cesarean Sections on Current Cesarean Rates

In their article in the February 1992 Journal, Bertollini et al.¹ examined the ef-

fects of hospital payment mode on cesarean section rates in the Lazio region of Italy. Although Scottish cesarean section rates appear high compared with those of other European countries,² they remain much lower than those suggested for Lazio or the United States. However, the combination of Scotland's cesarean sections and other operative deliveries produces rates comparable to Lazio's (1987 figures: 24.3% in Scotland,³ 27.1% in Lazio). One noted consequence of a high cesarean section rate is an increased proportion of women presenting who have had a cesarean previously and hence have a high rate of repeat cesarean sections.⁴

My analysis of 514 193 routinely collected Scottish births, taken from the maternal and neonatal forms of the system of Scottish morbidity records (forms SMR2 and SMR11⁵), indicate the predictive value of a previous cesarean section in determining the mode of delivery in a woman's current pregnancy. Over the period 1980 to 1987, the odds ratio of cesarean section associated with a previous cesarean was 12.26 (95% confidence interval [CI] = 9.64, 15.59) among women aged 20 to 35 with a breech presentation and 37.81 (95% CI = 36.33, 39.35) among women of the same ages with a presentation other than breech. For women with a previous cesarean section when the current presentation was not breech, Figure 1 illustrates the general decline from 1980 to 1987 in the log odds of cesarean sections in three age groups, but even the (relatively) low point at 1986 represents an odds ratio of 19.59 among women aged 20 to 35 years. Given such figures, it must be plausible that private hospitals in Lazio, with a higher-than-average cesarean section rate, are likely to have a high proportion of women presenting with a previous cesarean. The magnitude of risk involved means that small differences in case mix could conceivably explain a substantial part of the difference in crude section rates (even assuming that this risk is constant across payment mode).

Even if there is no difference, between the three modes of payment, in the proportion of women with a previous cesarean section delivery, it is possible that differing policies on repeat cesareans could lead to substantial differences. In a recent analysis of 96 Scottish maternity hospitals,⁶ we demonstrated how the performance of a hospital that undertook 48% fewer cesareans than expected was largely attributable to a significantly lower risk attached to the 14% of the

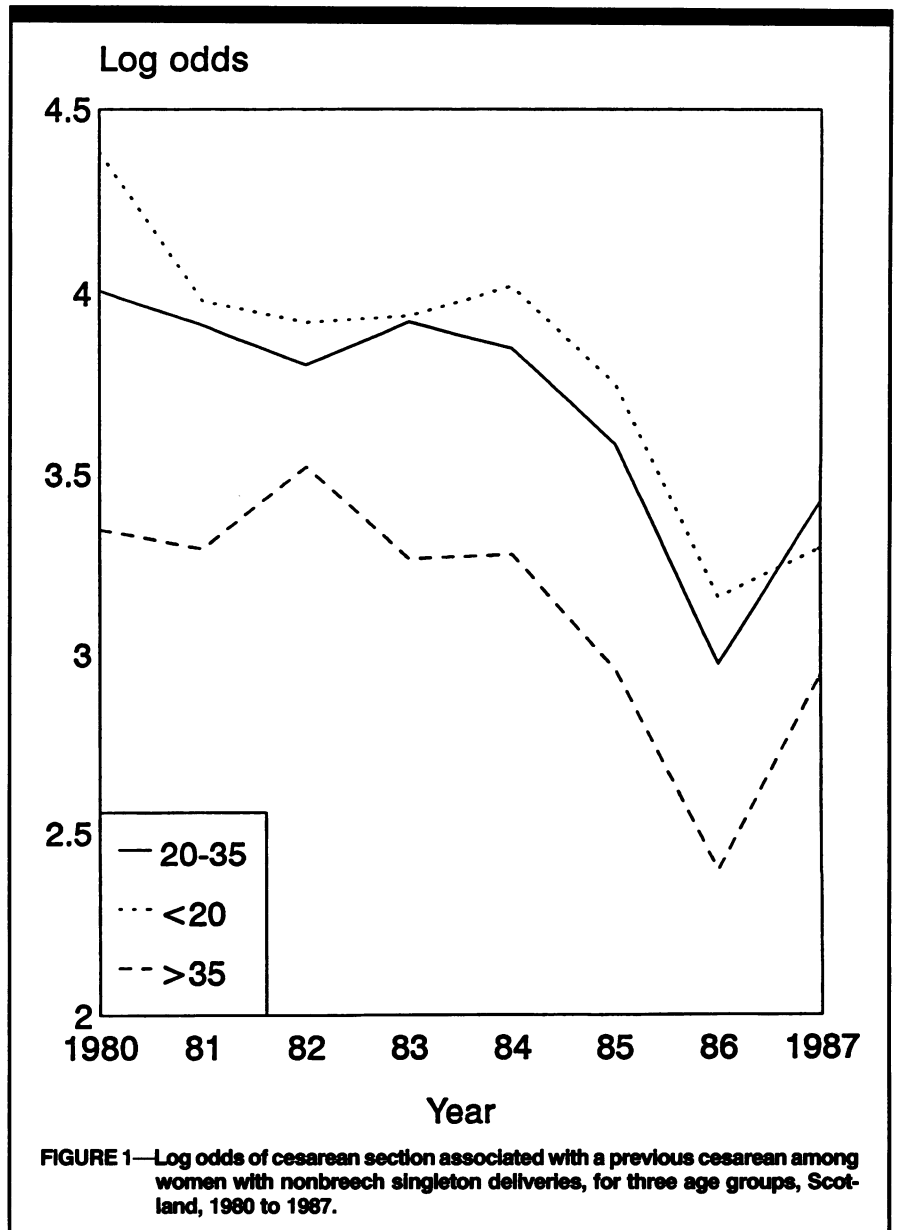


FIGURE 1—Log odds of cesarean section associated with a previous cesarean among women with nonbreech singleton deliveries, for three age groups, Scotland, 1980 to 1987.

women presenting who had had a previous cesarean. □

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References

1. Bertollini R, DiLallo D, Spadea T, Perucci C. Cesarean section rates in Italy by hospital payment mode: an analysis based on birth certificates. *Am J Public Health.* 1992;82:257-261.
2. Notzon FC, Placek PJ, Taffel SM. Comparisons of national cesarean-section rates. *N Engl J Med.* 1987;316:386-389.
3. Leyland AH. Trends in caesarean section. *Lancet.* 1991;337:1481-1482.
4. Myers SA, Gleicher N. 1988 U.S. cesarean-section rate: good news or bad? *N Engl J Med.* 1990;323:200.

5. Cole SK. Scottish maternity and neonatal records. In: Chalmers I, McIlwaine GM, eds. *Perinatal audit and surveillance.* London, England: Royal College of Obstetricians and Gynaecologists; 1980:39-51.
6. Leyland AH, Pritchard CW, McLoone P, Boddy FA. Measures of performance in Scottish maternity hospitals. *Br Med J.* 1991;303:389-393.

Bertollini and Colleagues Respond

We would like to thank Dr. Leyland for the interesting comments on our paper.¹ He correctly underlines that repeated cesarean sections are one of the major determinants of the increase of the cesarean section rate over the previous years in many countries.^{2,3} Unfortunately, previous cesarean section is not available on the Italian birth certificate;