Reviewer's report

Title: Analysis of Neonatal Mortality: Is Standardizing for Relative Birth Weight Biased?

Version: 1 Date: 12 March 2004

Reviewer: Germaine Buck

Reviewer's report:

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

None

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The authors, as have past authors attempting to uncross the lines, assume that the crossover is indeed a statistical artifact. This has served as an impetus for investigators to attempt to uncross the lines, especially in the absence of a known biologic argument in support of the crossover. While the crossover effect is an issue of much interest to the field of perinatal epidemiology, opinions indeed vary as to whether or not it is real or an artifact of methodology and how best to address this issue. This paper offers a different analytic approach and suggests that bias is introduced by using relative birth weights for comparisons of neonatal mortality. While controversial, the findings will continue the debate regarding the meaning of the crossover effect and, in my opinion, add an important dimension to the controversy surrounding this topic.

The authors are encouraged to explicitly state the assumptions underlying their modeling, and to consider the argument that the crossover effect may in fact be real in the interpretation of their results.

Given the use of linked US birth/infant death data sets for 1989-1991 and 1995-1997, it is highly likely that there are repeat births to mothers in this data set. Given the clustering of pregnancy outcomes (e.g., birth weight, gestation), the authors should comment whether this dependency is likely to be of concern in the applied models.

Another concern is the increasing use of labor inductions for pregnancies reaching 41 weeks. While this is the upper bound for the study population, it may be relevant for the authors to speculate how this may impact their findings. It is overly simplistic to assume that gestations >41 weeks cannot be differentiated with respect to errors and true values in vital registries.

It would be helpful for the authors to comment on the larger variability for black infants with regard to weight and gestation in comparison to whites as noted on Tables 1 & 2. Currently, there is little text pertaining to these tables.

Minor typographical error on page 6, line 15, "demonstrate"
None

**What next?:** Accept after discretionary revisions

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

None