Reviewer's report

Title: Racial disparities in infant mortality: What has birth weight got to do with it and how large is it?

Version: 1 Date: 29 March 2010

Reviewer: Robert Platt

Reviewer's report:

Major Compulsory Revisions

1. The major issue with this paper is the use of the terms “direct” and “indirect”. These terms have been dealt with in considerable detail in the literature in recent years (eg Vanderweele 2009 epidemiology; Kaufman et al Epi Perspectives Innovations 2004, Cole/Hernan IJE 2002). I am not clear from the paper how the authors define direct and indirect effects, and a review of some of this literature is essential to do so. In addition, the limitations of methods to estimate direct and indirect effects (discussed most clearly in Cole/Hernan) need to be addressed.

2. The authors should also consider the work of Hernandez-Diaz et al, that suggests that birthweight is not on the causal pathway.

2. The section on page 15, starting Racial differences..” is unclear. I am not sure what is meant by rates being “explained by the ‘compromised’ population, for example.

3. Conclusions could be clearer, and perhaps are a bit overstated. Also – much is known through other evidence about the role of birth weight and direct/indirect

Minor Essential Revisions

1. The “long term goal” at the end of the background should be in the discussion.

2. Describe how gestational age was derived from the NCHS cohort. Was it LMP-based, or clinical estimates?

3. The phrase “defined the African American “race”effect as an indicator variable (z ) on each of the 11 parameters” needs clarification I think you mean that you defined an indicator variable, and then defined the race effect by incorporating functions of that variable into multiple steps of the modeling process.

4. Sometimes “compromised” is in quotes; other times not. This should be corrected.

Discretionary Revisions

1. I, and I suspect other readers as well, am unfamiliar with Kitagawa decomposition; some detail here might help.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests