Author's response to reviews

Title: A Nearly Continuous Measure of Birth Weight for Gestational Age Using a United States National Reference

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PDF covering letter
Dear Ms. Veitch,

Please find attached our second revision to our manuscript “A nearly continuous measure of birth weight for gestational age using a United States national reference”, ID-9642458101300648.

As suggested by Dr. Gould, we have now provided the cell sizes as the top row in each of our data tables.

On the recommendation of Dr. Himes, we have included a detailed discussion of the variability of the values in the tables (page 5). The variability of our estimates is small in the weeks with the smallest number of births and negligible for weeks with many births. Therefore, the confidence intervals only minimally exceed the precision of the percentile estimates in the smallest groups, and do not do so in the larger gestational age cohort.

Additionally, we agree with Dr. Himes that our result of a single birth weight straddling several percentile levels within a given gestational age is unlikely to be physiologic, but rather represents sampling error or a bias towards recording round numbers. Therefore, we have taken his advice to smooth the data, which we have done using the 4253H smoothing procedure, twice, within each week of gestation. We have noted this addition to the methods on page 3, and revised the results accordingly. This procedure has eliminated most of the straddling birth weights, except at the lowest gestational ages. As we have noted in our previous response to the reviewers, it seems to us inappropriate to smooth within percentile, as this results in curves that differ only at the most populated gestational ages, ages at which we are most confident of the percentile estimates. The smoothing that we have now performed, within gestational week, eliminates the problem of sampling error without changing curves at a place where there are so many data supporting the existence of the observed phenomenon.

We also appreciate Dr. Platt’s additional review. As noted above, we have now smoothed the data within week of gestation. Additionally, we have added cell sizes to each table, by week of gestation. We have confirmed our finding of lack of normality by visual inspection of the birth weight distributions at several gestational ages (data not included). Accordingly, we expanded our discussion of the implications of our nonparametric method on percentiles and z-values, including an example of the amount of the bias that may be introduced by the normality assumption (page 4).
Thank you for your persistence in helping us to get this important national reference source published.

Sincerely,

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