Reviewer's report

Title: Eliciting parental support for the use of newborn blood spots for pediatric research

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Reviewer: William Funk

Reviewer's report:

This manuscript evaluates the utility and feasibility of retrieving archived dried blood spot (DBS) samples to support epidemiological research. The paper is very timely given increasing interest in using DBS for assessing environmental risk factors for chronic diseases and cancers. Because newborn DBS are collected by all states in the US, and because they capture early life exposures that occur during critical periods of human development, archived DBS collected for routine newborn screening represents a valuable resource. In addition, recent improvements in analytical methods now permit quantification of toxicant in very small volumes of blood, which has led to the development of many new assays for assessing exposures in DBS that were not possible previously. Consequently, evaluating the challenges and logistics associated with retrieving archived newborn DBS samples is highly important. The study was well designed, and the paper is well written. However, I do have suggestions for minor revisions.

1. The paper discusses two distinct challenges associated with using archived newborn DBS samples in epidemiological research. The first is the feasibility of getting the samples (i.e., parental consent), and the second is what can be measured once the samples are obtained. While the paper is largely focused on the first of these challenges, it is noted that a panel of targeted analytes were measured in the samples, including cytokines and environmental chemicals. However, results from these analyses are not presented.

2. On line 116 the authors state that they “aimed to assess these biomarkers of in utero infection or placental transfer of environmental chemicals in relation to adverse birth outcomes and early childhood development”. This statement is misleading since they did not present any biomarker results, nor did they evaluate any health endpoints.

3. While the paper did a very nice job of evaluating the feasibility of obtaining archived DBS samples, caution is needed not overstate what is being reported in the current study.

4. It was noted that most of the retrieved samples had adequate blood to perform the laboratory analyses. However, it would have been useful to report more information on the quality of the samples. For example, what was the estimated blood volume remaining in the archived samples? Was there evidence of smearing, serum rings, blood applied on top of blood, and other sample quality issues that can affect lab results?
Overall this paper is of high quality and represents an important contribution to the field.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have two pending US patents related to measuring biomarkers in dried blood spots samples.