

Supplemental Material.

Appendix I.

For vaccines, we asked the caregiver to provide the child's vaccination card and supplemented with medical records from pediatricians. Hg doses were assigned based on types of vaccines and dates given. We obtained neither vaccination cards nor medical records on 62 children. Out of 347 children with vaccine data, 42 were immunized within 90 days of the blood draw during the years 2003-2006. According to the FDA Center for Biologics and Evaluation and Research (U.S. Food and Drug Administration), during that time period, all routinely recommended vaccines for U.S. infants were available only as thimerosal-free formulations or contained only trace amounts of thimerosal (≤ 1 microgram Hg per dose), with the exception of inactivated influenza vaccine. Although inactivated influenza vaccine for pediatric use was available in a thimerosal-preservative containing formulation and in formulations that contain either no thimerosal or only a trace of thimerosal, the latter was in limited supply and administered doses likely contained Hg. In our analysis, 5 children received influenza vaccines and 1 received diphtheria-tetanus (DT) vaccine that were likely to contain thimerosal in the 90 days prior to their blood draw. We assigned doses as: 25 μg Hg/0.5 mL influenza vaccine for children three years or older and 12.5 μg Hg/0.25mL for children younger than three years. The child who received DT was assigned a dose of 0.3 μg Hg/0.5 mL vaccine. To estimate the amount of Hg in the blood at time of the blood draw due to vaccines, we

assumed first order kinetics with a 7-day half life (Pichichero et al. 2002), although even shorter half-lives have also been reported (Pichichero et al. 2008).

Appendix II.

Mothers of participants in this study were more likely to be white, to have a college education, to be born in the U.S., and to have private health insurance than those whom we attempted, unsuccessfully, to enroll (Table 1). We were able to quantify and adjust for this non-random participation because all potentially eligible children were identified from or linked to birth certificate files containing these demographic factors. We derived inverse probability weights to ensure that our results could be generalizable to the pool of potential participants in this case-control study. The probabilities were generated from a multiple logistic regression model predicting participation conditional on initial diagnostic group and sociodemographic factors. We truncated the weights at 25, to avoid overly influential observations; this affected 4 observations only. In fitting the regression models of blood Hg on developmental diagnosis and covariates, we used these weights and adjusted for the design effect, stratified random sampling without replacement; these analyses were conducted using PROC SURVEYREG, SAS 9.2.

References

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