



CONTAGIOUS COMMENTS

Department of Epidemiology

What about Vaccine Safety?

Jim Todd, MD

The best way to improve health outcomes for our patients is to prevent bad ones. The CDC has called immunization one of the greatest public health successes of the 20th century. We all want to forget the terrible Colorado influenza outbreak of 2003, but instead it should serve as a stern warning to heed the AAP and CDC recommendations to vaccinate children 6 to 24 months of age and their household contacts, as well as children of all ages with chronic diseases. But in spite of Colorado's nation-trailing vaccination rates and continued high rates of some vaccine-preventable diseases, there are always those who raise questions about the safety of our vaccines. No matter how speculative, these claims worry many parents who don't have the information to discriminate between hypothesis and fact.

Now we have that information. In 2000, the Centers for Disease Control and Prevention and the National Institutes of Health asked the Institute of Medicine (IOM) to establish an independent expert committee to evaluate evidence regarding whether vaccines cause certain health problems, and to report their conclusions and recommendations. The following is excerpted from the IOM report (<http://www.cdc.gov/nip/news/iom-thim5-18-04.htm#Overview>):

"The IOM Immunization Safety Review Committee's most notable conclusions were:

- *Neither thimerosal-containing vaccines nor MMR vaccine are associated with autism.*
- *The hypotheses regarding a link between autism and MMR vaccine and thimerosal-containing vaccines lack supporting evidence and are only theoretical.*
- *Future research to find the cause of autism should be directed toward other promising lines of inquiry that are supported by current knowledge and evidence and offer more promise for providing an answer.*

The committee's conclusion that MMR vaccine is not associated with autism is consistent with their previous report on the topic. The 2004 report explains that in 2001 there were no published epidemiological studies examining the potential association between thimerosal-containing vaccines and neurodevelopmental disorders. Since 2001, several studies have been published which the committee states "consistently provided evidence of no association."

A review of the current data was just published by our own Sarah Parker who, with colleagues from CDC has analyzed all the available studies on neurological injury and thimerosal (*Sarah K. Parker, MD; * Benjamin Schwartz, MD; James Todd, MD; * and Larry K. Pickering, MD. Thimerosal-Containing Vaccines and Autistic Spectrum Disorder: A Critical Review of Published Original Data PEDIATRICS Vol. 114 No. 3 September 2004, pp. 793-804*). Sarah systematically reviewed published articles that report original data pertinent to the potential association between thimerosal-containing vaccines and ASD/NDDs. Twelve publications that met the selection criteria were identified by the literature search: 10 epidemiologic studies and 2 pharmacokinetic studies of ethylmercury. The design and quality of the studies showed significant variation. The conclusion: studies **do not** demonstrate a link between thimerosal-containing vaccines and ASD. Epidemiologic studies that support a link demonstrated significant design flaws that invalidate their conclusions.

Sarah's results support the conclusion that we should not allow the paranoia of a few to undermine our duty to serve and protect our patients. Of note, thimerosal has been removed from all routine childhood vaccinations in the US except some formulations of influenza and dT boosters. For those who remain concerned, options for influenza vaccination that contain no or trace amounts of thimerosal are available (Flumist, and preservative-free versions of Fluzone and Fluviron), but the bottom-line is: we should reassure our patients' parents, and do everything we can to prevent another influenza outbreak like the one we experienced last year.



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The Children's Hospital
1056 East 19th Avenue, Denver, Colorado 80218

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EDITOR:

Diane Carter, Staff Assistant III
The Children's Hospital, Department of Epidemiology, B-276
1056 E. 19th Avenue, Denver, CO 80218
Phone: 303-861-6072; FAX: 303-837-2631

Carter.Diane@tchden.org
www.thechildrenshospital.org

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