

# AMERICAN NURSES ASSOCIATION

## Position Statement on

### Mercury in Vaccines



Effective Date: June 21, 2006

Status: New Position Statement

Originated by: ANA Center for Occupational and Environmental Health

Adopted by: ANA Board of Directors

**Summary:** Thimerosal is a preservative used in vaccines. Thimerosal metabolizes into ethylmercury, a form of mercury that is a neurotoxicant. Because there is a great deal of concern surrounding the use of thimerosal in vaccines, in 1999 the Public Health Service (PHS) agencies, the American Academy of Pediatrics (AAP), and vaccine manufacturers agreed that thimerosal should be reduced or eliminated in vaccines as a precautionary measure. However, the continued use of thimerosal as a preservative in influenza vaccine remains controversial for many concerned persons due to the fear that thimerosal in vaccines has a causal relationship with the increase in Autism Spectrum Disorder. Resulting legislation aimed at limiting thimerosal in vaccines has been directed primarily at protecting vulnerable populations (pregnant women and their unborn fetuses, and children).

**Background:** Immunizations are an essential and well-recognized component of our public health system. The American Academy of Pediatrics (AAP) recommends that all children 6 months and older receive seasonal influenza immunization. Thimerosal is a preservative used in vaccines. Thimerosal metabolizes into ethylmercury, a form of mercury- a known neurotoxicant. On this basis, it has been hypothesized that the use of thimerosal as a preservative in vaccines is responsible for some cases of Autism Spectrum Disorder (which has been diagnosed in 1 in 166 children). Thimerosal has been phased out of all routinely recommended infant vaccines in the US except for the influenza vaccine. Infants and pregnant women, due to the vulnerability of the fetus, are of primary concern for mercury exposure.

Non-thimerosal-containing vaccine is available in more expensive single dose vials and syringes. The price difference in the 2005-2006 influenza season was \$3.50. Some manufacturers balk at offering pre-filled influenza vaccine claiming loss of vaccine while prefilling, possibly leading to a shortage of influenza vaccine. However, other manufacturers assure they can produce enough thimerosal-free vaccine and the price is based on demand.

There have been at least three comprehensive reviews of the literature investigating the association between thimerosal containing vaccine (TCV) and autism that have been undertaken. Two were conducted by the Institute of Medicine (IOM), (Institute Of Medicine, 2001, 2004) and another by the American Academy of Pediatrics (AAP) (American Academy of Pediatrics, 2003). The 2001 IOM report was done on the studies available at the time, and concluded that the hypothesis was biologically plausible, and "...that the evidence was inadequate to accept or reject a causal relationship between thimerosal exposure from childhood vaccines and ... autism." The report recommended a move away from TCVs for infants and pregnant women. In 2004, a second review was done that included studies done in the interim. This time the IOM concluded "...that the evidence favors rejection of a causal relationship between thimerosal containing vaccines and autism." The review on the same topic by the AAP drew a similar conclusion.

However, substantial biological plausibility still exists regarding the possible neurotoxic effect of thimerosal, and research on the association between TCV and the increasing incidence of Autism Spectrum Disorder continues. Some individuals remain skeptical and concerned about this form of mercury in vaccine.

The Precautionary Approach, adopted by the ANA Board of Directors in 2003 as association policy, states that:

...when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. The principle includes taking action in the face of uncertainty; shifting burdens of proof to those who create risks; analysis of alternatives to potentially harmful activities; and participatory decision-making methods.

The continued gaps in knowledge regarding the safety of TCV present a situation of uncertainty for which the Precautionary Approach can help guide decision making.

Recently, several states have passed laws restricting the use of TCV. Much of the concern and the resulting legislation have been directed primarily at exposure of vulnerable populations (pregnant women, due to the sensitivity of the developing fetus, and children). California and Iowa have limitation bans on TCVs for all vaccines, excluding influenza. Legislation to ban or limit the levels of thimerosal in vaccine or to investigate the topic further was introduced in eighteen states in 2006- Colorado, Florida, Hawaii, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Nebraska, New Jersey, New Mexico, Pennsylvania, Tennessee, Vermont, Virginia, and Washington.

Prohibiting the use of TCVs in the presence of an avian and/or other pandemic influenza outbreak could significantly jeopardize the public's health, increasing the rate of mortality and morbidity. In the event of an avian and/or other pandemic influenza outbreak, if only a TCV is available, it is prudent to immunize with the TCV until a non-TCV would become available.

The World Health Organization has stated it needs thimerosal to produce vaccines for developing countries. There is concern that if banning TCV globally is not adhered to, the U.S. will send un-used TCVs to developing countries, creating a negative impact in these countries. Viable options for the delivery of multi-dose vaccines in developing countries should be developed as a matter of priority.

ANA recognizes the need to weigh-in on the issue of TCVs. Nurses in their roles as patient advocates seek guidance regarding this issue. It is imperative that guidance is provided based on ANA principles and positions and on current science based evidence.

The American Nurses Association:

- insists that pharmaceutical companies develop technology to produce seasonal influenza vaccine without using thimerosal as a preservative and cease using thimerosal as a preservative in vaccines immediately,

- insists that pharmaceutical companies increase the availability of single dose vials and pre-filled syringes to meet the subsequent increased demand with discontinuation of the use of thimerosal as a preservative in multi-dose vials of seasonal influenza vaccine,
- in recognition of a public health emergency, urges the use of the available vaccine in the event that a pandemic influenza and/or avian influenza pandemic occurs to help protect registered nurses, their families, their patients and communities from extending the outbreak, and
- recognizes the World Health Organization's leadership role in promoting efforts to develop alternatives to using multidose vials of any thimerosal containing vaccine in the developing world.

## **References**

- Institute Of Medicine, 2001. Immunization Safety Review: Thimerosal-Containing Vaccines and Neurodevelopmental Disorders. National Academy Press, Washington, D.C.
  - Institute Of Medicine, 2004. Immunization Safety Review: Vaccines and Autism. National Academy Press, Washington, D.C.
  - American Academy of Pediatrics, 2003. Study Fails to Show a Connection Between Thimerosal and Autism. Available on-line at [<http://www.aap.org/profed/thimaut-may03.htm>].
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### Related Past Action:

- 1 The ANA Board of Directors adopted Precautionary Principle, 2003
- 2 The ANA House of Delegates passed the Action Report on Creation of Environmental Health Principles, 2004.

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