Requiring the Tdap Vaccine for 7th Grade Students

Dear Judge Lipman,

The attachment may answer the questions, how effective is the Tdap vaccine and could vaccinated students spread the pertussis bacteria without knowing?

Thank you,
Chris Abel
Tdap Vaccine for 7th Grade Students

SONAR, P 43 “Efficacy Pertussis Vaccine

Estimates of acellular pertussis vaccine efficacy in adolescents and adults range from 80 percent to 85 percent.”

According to the “Summary for Considerations for Tdap Revaccination” from the Feb, 2013 ACIP meeting the overall Tdap vaccine effectiveness was approximately 66% to 78%. A Tdap vaccine effectiveness case-control study was conducted in Minnesota aged 11 through 17 years on a routine adolescent vaccination program and found the Tdap vaccine was 72% effective. And in Washington after two years the vaccine waned to about 50% protection.

“Also, those who have received the vaccine yet subsequently get pertussis are likely to experience milder illness.”

According to Respiratory Reviews.com, the latest clinical information on respiratory medicine, the pertussis vaccine may protect against clinical disease, as defined by WHO criteria, but not against infection. This may result in vaccinated persons serving as a silent reservoir with potential to transmit the bacteria to others. As the MDH stated vaccinated persons may have milder illness which may allow vaccinated persons unknowingly spread pertussis bacteria.

Minnesota, 2007 to 2012, over half of the possible sources of exposure for reported pertussis cases in infants less than 1-year-of-age is unknown. One possible source could have been a vaccinated person who may not have clinical disease but still carried the bacteria. How would we know unless everyone is test which would not be reasonable? It cannot be ruled out that vaccinated persons "may serve as reservoirs and potential transmitters of infection" especially if the vaccinated population is assumed to be protected from pertussis.

WHO meeting on the acellular vaccine: In a discussion, Dr Cherry pointed out that Japan also reported pertussis incidence in children less than three months of age had not declined substantially with return to a high vaccination coverage.

In order to have herd protection you would have to have high vaccination level in the whole population not just vaccinating all 7th grade students. But even if all 7th grade students were required to be vaccinated, another revaccination would probably be needed again because of waning immunity. And from the ACIP discussion, “no strong evidence had been observed for herd immunity or an added benefit of high vaccination coverage. …”

Another problem of requiring any vaccine is that parents may not ask enough questions to make an informed decision for their own child. They trust the MDH. But if only parents would ask more questions and demand a more effective pertussis vaccine maybe a better vaccine would become available.

It is very difficult to have any kind of consumerism if a product is required. It would be different if the ACIP would be actively advocating for a more effective pertussis vaccine from the vaccine manufacturers instead of just recommending the already licensed Tdap vaccine. If the ACIP won’t demand a more effective pertussis vaccine, who will?
Thank you,

Chris Abel, RN
Crystal MN
Vaccine Awareness Minnesota

Please consider reading the Minutes of the February 2013 ACIP meeting p 55-72, Considerations for Tdap Revaccination

Minutes of the February 2013 ACIP meeting
minutes of ACIP’s February meeting

Considerations for Tdap Revaccination p 55-72

P 61 “More recent post-licensure studies of Tdap show vaccine effectiveness between 66% and 78%.”

P 63 “A Tdap vaccine effectiveness case-control study was conducted in Minnesota on a routine adolescent vaccination program from October 2007 through June 2008 or September through December 2008. The study included adolescents aged 11 through 17 years. Cases were polymerase chain reaction (PCR) or culture-confirmed with a cough of 7 days more, which was a somewhat more inclusive case definition. These data do not take into consideration confirmed primary series receipt, but most would have received some whole-cell and some aP vaccines. Vaccine effectiveness was 72.0% (95% CI: 38.0-87.3) in this group of 99 cases and 187 controls [Skoff et al. NIC 2011, Washington, DC]. “

P 64 “…In summary, studies in the field are quite consistent overall. Tdap effectiveness seems to be approximately 66% to 78% in field observational studies. Preliminary data suggest that effectiveness wanes within 3 to 4 years among children who received acellular vaccines. This is believed to be consistent with the observed epidemiology. No strong evidence had been observed for herd immunity or an added benefit of high vaccination coverage. …”

p 71 “Also of concern to Dr. Gorman with regard to a revaccination strategy was the Washington State cohort, for which it appeared that in less than 2 years there would be about 50% protection, so more frequent vaccination would be required. …”
“...The immunity conferred by the DPT vaccine diminishes within five to 10 years, Srugo et al explained. The present findings suggest that immunity does not persist into early childhood in some cases and that the DPT vaccine does not fully protect children against clinical disease, as defined by WHO criteria. In addition, the vaccine only protects against clinical disease and not against infection. Thus, vaccinated people "may serve as reservoirs and potential transmitters of infection," the researchers suggested. Furthermore, because vaccinated persons who are infected with pertussis develop nonspecific symptoms, they may serve as silent reservoirs of infection."

References

MDH Reported pertussis cases in infants <1 year of age and likely source of exposure:

During 2012, 176 (4%) pertussis cases were reported in infants <1 year of age. A likely source of exposure was identified for 55 (31%) of those cases; 12 (22%) were infected by adults 18 years of age and older, 9 (16%) were infected by an adolescent 13-17 years of age, 24 (44%) were infected by a child <13 years of age, and 10 (18%) were of unknown age. For the 121 (69%) infant cases with no identified source of infection, the source was likely from outside the household. http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum12/sum12.pdf

During 2011, 49 pertussis cases were reported in infants <1 year of age. A likely source of exposure was identified for 16 (33%) cases; 6 (31%) were infected by adults 18 years of age and older, 1 (6%) was infected by an adolescent 13 to 17 years of age, and 9 (50%) were infected by a child <13 years of age. For the 33 (67%) cases with no identified source of infection, the source was likely from outside the household. http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum11/pertussis.html

During 2010, 75 pertussis cases were reported in infants < 1 year of age. A likely source of exposure was identified for 36 (48%) cases; 12 (33%) were infected by adults 18 years of age and older, 2 (6%) were infected by an adolescent 13 to 17 years of age, and 20 (56%) were infected by a child less than 13 years of age. For the 39 (52%) cases with no identified source of infection, the source was likely from outside the household. http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum10/pertussis.html

During 2009, 47 pertussis cases were reported in infants <1 year of age. A likely source of exposure was identified for 18 (38%) cases; 10 (21%) were infected by adults 18 years of age and older, 1 (2%) was infected by an adolescent 13 to 17 years of age, and 7 (15%) were infected by a child <13 years of age. For the 29 (62%) cases with no identified source of infection, the source was likely from outside the household. http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum09/pertussis.html
During 2008, 53 pertussis cases were reported in infants less than 1 year of age. A likely source of exposure was identified for 20 (38%) cases; nine (17%) were infected by adults 18 years of age and older, two (4%) were infected by an adolescent 13 to 17 years of age, and 6 (11%) were infected by a child less than 13 years of age. For the 33 (62%) cases with no identified source of infection, the source was likely from outside the household.

http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum08/pertussis.html

During 2007, 30 pertussis cases were reported in infants less than 1 year of age. A likely source of exposure was identified for 14 (47%) cases; nine (30%) were infected by adults 18 years of age and older, two (7%) were infected by a child 13 years of age or older, and three (10%) were infected by a child less than 13 years of age. For the 16 (53%) cases with no identified source of infection, the source was likely from outside the household.

http://www.health.state.mn.us/divs/idepc/newsletters/dcn/sum07/pertussis.html

**Pertussis vaccine and transmission**

Pertussis is considered an endemic disease, characterized by an epidemic every 2–5 years. **This rate of exacerbations has not changed, even after the introduction of mass vaccination – a fact that indicates the efficacy of the vaccine in preventing the disease but not the transmission of the causative agent (B. pertussis) within the population.**

The effects of whole-cell pertussis vaccine wane after 5 to 10 years, and infection in a vaccinated person causes nonspecific symptoms (3–7). Vaccinated adolescents and adults may serve as reservoirs for silent infection and become potential transmitters to unprotected infants (3–11). The whole-cell vaccine for pertussis is **protective only against clinical disease, not against infection (15–17). Therefore, even young, recently vaccinated children may serve as reservoirs and potential transmitters of infection.**


Case definition has been particularly problematic in all of the recent DTaP vaccine efficacy trials. For uniform comparative purposes a case definition was suggested by a WHO expert committee.39 This definition required 21 days of paroxysmal cough plus laboratory confirmation of pertussis in the subject or household contact. There are 2 problems with this definition. **The first is that a substantial number of B pertussis infections in unvaccinated children are mild and would not meet the case definition. The second is that all pertussis vaccines tend to modify duration and severity of disease rather than completely preventing illness.**18,2326-29,35,36,40 Therefore, the WHO definition has made all vaccines look better than they are and it has tended to obscure differences between vaccines.  http://pediatrics.aappublications.org/cgi/content/full/104/6/1381

During a **WHO meeting** on the acellular vaccine and Japan’s experience

http://whqlibdoc.who.int/ha/1999/WHO_V&B_99.03.pdf