

Immunization Safety Office Updates

Centers for Disease Control and Prevention

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Centers for Disease Control and Prevention (CDC)

Advisory Commission on Childhood Vaccines (ACCV)

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National Center for Emerging and Zoonotic Infectious Diseases

Division of Healthcare Quality Promotion – Immunization Safety Office



Topics

- ❑ **Update on: Glanz et al. White Paper on studying the safety of the childhood immunization schedule in the Vaccine Safety Datalink. *Vaccine*. 2016;34 Suppl 1:A1-A29.**
- ❑ **Selected vaccine safety publications**

Vaccine Safety Datalink (VSD) White Paper

□ Background on the VSD White Paper¹

- 2013 Institute of Medicine (IOM) report “Childhood Immunization Schedule and Safety: Stakeholder Concerns, Scientific Evidence, and Future Studies”²
 - Available evidence indicated that the current U.S. immunization schedule was safe; however, few published investigations had specifically examined the safety of the recommended childhood schedule as a whole
 - IOM recommended that additional observational studies of the safety of the schedule were warranted, and stated that the VSD represents one of the best resources in the nation for conducting such studies
- Guided by the IOM findings, CDC commissioned a White Paper to assess how the VSD could be used to study the safety of the childhood immunization schedule

¹ Glanz et al. White Paper on studying the safety of the childhood immunization schedule in the Vaccine Safety Datalink. *Vaccine*. 2016;34 Suppl 1:A1-A29.

² <http://iom.nationalacademies.org/Reports/2013/The-Childhood-Immunization-Schedule-and-Safety.aspx>

Vaccine Safety Datalink (VSD) White Paper

□ Objectives of the VSD White Paper

- Define types of alternative immunization schedules and patterns of undervaccination that could be evaluated, focusing on the first 24 months of age
- Identify plausible adverse event outcomes that could be related to the childhood immunization schedule, with an emphasis on long-term adverse events
- Suggest methodological approaches that could be used to assess the safety of the recommended schedule as a whole
- Propose next steps for studying the safety of the childhood immunization schedule within the VSD

Vaccine Safety Datalink (VSD) White Paper

- **Content areas of the VSD White Paper**
 - **Defining exposure to different immunization schedules**
 - **Identifying health outcomes to study in the context of the immunization schedule**
 - **Describing epidemiological and statistical methods to study the safety of the schedule.**

Vaccine Safety Datalink (VSD) White Paper

□ Summary

- The VSD White Paper provides a comprehensive assessment for how the VSD could be used to study the safety of the recommended childhood immunization schedule
- Guided by subject matter expert engagement, the document outlines a 4 staged approach for identifying exposure groups of undervaccinated children, presents a list of 20 prioritized outcomes, and describes various study designs and statistical methods that could be used to analyze the safety of the schedule
- VSD investigators will be able to use this document as a guide when designing and conducting studies of the safety of childhood immunization schedule, if such studies are judged to be necessary

Selected publications

- ❑ **Glanz et al. Cumulative and episodic vaccine aluminum exposure in a population-based cohort of young children. *Vaccine*. 2015;33(48):6736-44.**
 - **Up-to-date children were exposed to 11-26% more aluminum from vaccines than undervaccinated children.**
 - **Power analyses demonstrated that safety studies of aluminum could detect relative risks ranging from 1.1 to 5.8 for a range of adverse event incidence.**
 - **The safety of vaccine aluminum exposure can be feasibly studied in the VSD. However, possible biological mechanisms and confounding variables would need to be considered before conducting any studies.**

Selected publications

- ❑ **Groom et al. Influenza Vaccination During Pregnancy: Influenza Seasons 2002-2012, Vaccine Safety Datalink. Am J Prev Med. 2015 Oct 30. pii: S0749-3797(15)00505-X.**
 - **Influenza vaccination coverage among pregnant women increased between the 2002-2003 and 2011-2012 seasons, although it was still below the developmental Healthy People 2020 goal of 80%.**
 - **The 2004 ACIP language change positively impacted first-trimester vaccination uptake.**
 - **Vaccine Safety Datalink data estimates were consistent with U.S. estimates.**

Selected publications

- ❑ **Moro et al. Surveillance of adverse events after the first trivalent inactivated influenza vaccine produced in mammalian cell culture (Flucelvax®) reported to the Vaccine Adverse Event Reporting System (VAERS), United States, 2013-2015. *Vaccine*. 2015;33(48):6684-8.**
 - **Review of VAERS reports did not identify any concerning pattern of AEs after cell culture IIV3 (ccIIV3).**
 - **Injection site and systemic reactions were the most commonly reported AEs, similar to the pre-licensure clinical trials.**
 - **Reports following ccIIV3 in persons <18 years highlight the need for education of healthcare providers regarding approved ccIIV3 use.**

Selected publications

- ❑ **McCarthy et al. Vaccination and 30-Day Mortality Risk in Children, Adolescents, and Young Adults. Pediatrics. 2016; 137(3):e2 0152970.**
 - **In a study cohort of individuals ages 9 to 26 years, of 1,100 deaths identified during the study period, 76 (7%) occurred 0 to 30 days after vaccination.**
 - **Risk of death was not increased during the 30 days after vaccination, and in a causality assessment no deaths were found to be causally associated with vaccination.**

Selected publications

- ❑ **Kharbanda et al. Maternal Tdap vaccination: Coverage and acute safety outcomes in the vaccine safety datalink, 2007-2013. *Vaccine*. 2016;34(7):968-73.**
 - **Tdap coverage during pregnancy increased from 2007 through 2013, but was still below 50%.**
 - **No acute maternal safety signals were detected in this large cohort.**
 - **Outcomes included a composite outcome of medically attended acute adverse events within 3 days of vaccination, incident neurologic events, thrombotic events, new onset proteinuria, gestational diabetes, and cardiac events.**

Selected publications

- ❑ **Glanz et al. White Paper on studying the safety of the childhood immunization schedule in the Vaccine Safety Datalink. *Vaccine*. 2016;34 Suppl 1:A1-A29.**
 - **While it appears feasible to study the safety of the recommended immunization schedule in settings such as the VSD, these studies will be inherently complex, and as with all observational studies, will need to carefully address issues of confounding and bias.**
 - **In light of these considerations, decisions about conducting studies of the safety of the schedule will also need to assess epidemiological evidence of potential adverse events that could be related to the schedule, the biological plausibility of an association between an adverse event and the schedule, and public concern about the safety of the schedule.**



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Thank You

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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