The NVSN is a CDC-sponsored program established in 1999. The goal of the program is to evaluate the impact of new vaccines and vaccine policies through a network of sites in the U.S. The current NVSN sites are affiliated with the University of Rochester in Rochester New York; Vanderbilt University in Nashville, Tennessee; and Cincinnati Children's Hospital Medical Center in Cincinnati, Ohio. The sites conduct population-based inpatient and enhanced outpatient surveillance for vaccine preventable disease outcomes, applied epidemiologic and health service research, and investigator-initiated studies to achieve the goals of the network.

The program complements existing surveillance programs for vaccine-preventable diseases by conducting year-round active population-based surveillance for hospitalizations associated with acute respiratory illness (ARI) in children < 5 years of age who reside in the three sites' counties (Monroe County NY, Davidson County TN, Hamilton County OH). Active surveillance is conducted in emergency departments and outpatient clinics. Laboratory testing includes viral culture and RT-PCR for viral respiratory pathogens including influenza, RSV, and parainfluenza, and for hMPV and picornaviruses for selected years.

In addition to surveillance, the NVSN has conducted special studies of feasibility/KAP, vaccination with influenza and pneumococcal conjugate vaccine (PCV7), and collected data on other childhood vaccines. Although new vaccines and vaccine policies have focused on young children and ARI, the NVSN is not restricted to this age group or viral respiratory pathogens. Future activities may include other vaccines that are in development (e.g., rotavirus).

New Vaccine Surveillance Network Partners

- University of Rochester School of Medicine and Dentistry, Rochester, New York
  - Principal Investigator: Peter Szilagyi, MD
  - Co-Principal Investigators: Caroline Hall, MD and Geoff Weinberg, MD
- Vanderbilt University School of Medicine, Nashville, Tennessee
  - Principal Investigator: Kathryn Edwards, MD
  - Co-Principal Investigator: Marie Griffin, MD, MPH
- Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio
  - Principal Investigator: Mary Allen Staat, MD, MPH
  - Co-Principal Investigator: Ardythe Morrow, PhD
- Centers for Disease Control and Prevention, National Immunization Program, Atlanta, Georgia
  - Project Officer: Marika Iwane, PhD., MPH

Selected Studies*

- Population-based year-round surveillance of children <5 years of age hospitalized for fever/ARI.
- Surveillance for medically-attended visits for fever/ARI among children <5 years of age in emergency departments and outpatient practices during respiratory season.
- Assessing direct and indirect economic costs of influenza for inpatient and outpatient care through household interviews and chart reviews.
- Feasibility of implementing expanded recommendations for influenza vaccination of young children through surveys, time motion studies, and database assessment of visit burden on practices.
- Influenza vaccine effectiveness studies in young children.
- Measuring the impact of PCV7 on disease burden in infants and young children using insurance claims databases.
- Assessing the impact of PCV7 on the number of vaccination visits and shots, delivery of other vaccines, disease outcomes such as otitis media, and antimicrobial use.
- Survey of provider practices during the PCV7 shortage in 2001-03 and chart reviews in a sample of practices to assess compliance with vaccine recommendations.

*Supplemental funding from non-CDC sources provided support for some of these studies.

Selected Publications

Weinberg GA, Erdman DD, Edwards KM, Hall CB, Walker FJ, Griffin MR, Schwartz B. Superiority of Reverse-transcription Polymerase Chain Reaction to Conventional Viral Culture in the Diagnosis of Acute Respiratory Tract Infections in Children. *JID* 2004;189:706-710.

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Erdman D, Weinberg GA, Edwards KM, Walker FJ, Anderson B, Winter J, Gonzalez M, Anderson LJ. GeneScan reverse transcription-PCR assay for detection of 6 common respiratory viruses in young children hospitalized with acute respiratory illness. *J Clin Microbiol* 2003; 41:4298-4303.

Poehling KA, Szilagyi PG, Edwards K, Mitchel E, Barth R, Hughes H, LaFleur B, Schaffer SJ, Schwartz B, Griffin MR. *Streptococcus pneumoniae*-related illnesses in young children: secular trends and regional variation. *Pediatric Infectious Disease Journal* 2003; 22:391-394.

Szilagyi PG, Iwane MK, Humiston SE, Schaffer S, McInerny T, Shone L, Jennings J, Washington ML, Schwartz B. Time spent by primary care practices on pediatric influenza vaccination visits: Implications for universal influenza vaccination. *Archives of Pediatrics & Adolescent Medicine* 2003. 157(2):191-195.

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In Press

Iwane M, et al. Population-based surveillance for acute respiratory infections requiring hospitalization: epidemiology and etiology. *Pediatrics*, in press. 2004.

Mullins JA, Erdman D, Weinberg GA, Edwards K, Hall CB, Walker FJ, Iwane M, Anderson L. Human Metapneumovirus Infection In Children Hospitalized For Respiratory Disease. *EID*, in press. April 2004

Poehling KA, LaFleur B, Szilagyi PG, Edwards KM, Mitchel E, Barth R, Schwartz B, Griffin MR. Population-based Impact of Pneumococcal Conjugate Vaccine in Young Children. *Pediatrics*, in press.