Unprotected People #50
Varicella (Chickenpox)

Indiana girl dies of varicella

The focus of the article is the distressing and preventable death of an 11-year-old girl from varicella zoster infection complicated by streptococcal sepsis. The likely cause of the child's exposure was a chickenpox outbreak at school.

Wayne Staggs, MS, and Donna Allen, BS, of the Immunization Program of the Indiana State Department of Health, wrote the article. It appeared in the August 2002 issue of the Department's publication Indiana Epidemiology Newsletter, *under the headline* "Varicella Death Reported in Indiana." *We are reprinting the article with the Department's permission and making it available to you with the exception of a graph and some other details.*

On May 23, 2002, a previously healthy 11-year-old white female presented to the Emergency Room of Hospital A with a history of fever, tachypnea, and varicella zoster infection that had lasted up to 12 days. The Emergency Room physician recognized the patient was in shock and she was immediately transported to the Pediatric Intensive Care Unit of Hospital B. Upon arrival at the Pediatric Intensive Care Unit, the patient was noted to be hypotensive and cyanotic. Her blood pressure was 58/33 with a temperature of 101.2 F and a pulse rate of 180 per minute. At this time the patient was urgently intubated, but was poorly perfused with no pulses palpable. Cardiopulmonary resuscitation was initiated, which lasted approximately 33 minutes. Examination at this time revealed a severely encephalopathic child with occasional gasping respirations and no other movements and no response to pain.

Further physical examination revealed a patient covered with severe vesicular eruptions that extended from her face and covered her entire trunk to involve the extremities up to below the level of the knees as well as below the level of the elbows. She had vesicular lesions in the interdigital areas of both hands and feet and there were a number of petechial lesions noted all over her body. Her entire trunk was covered with ulcerated necrotic lesions as well as some hemorrhagic lesions noted on her lower extremities.

The patient had been treated previously with Acyclovir for two days (beginning May 16), but was switched to Famvir on May 18 following some facial swelling thought to be from the Acyclovir. The patient completed a five-day course of Famvir.

A blood culture revealed gram positive cocci, which was later identified as Streptococcus pyogenes (group A beta hemolytic strep). There was no laboratory analysis performed to specifically identify varicella virus as the agent causing the rash.

As the child's condition continued to deteriorate throughout the day, the fact that this was an irreversible case of septic shock was described to the parents. The child died early in the morning on May 24, 2002. Due to the clarity and severity of the septicemia with which this child presented and the profound septic shock, it was decided that the cause of death was an obvious case of varicella zoster infection complicated by streptococcal sepsis. It was therefore concluded an autopsy was not necessary.

This case was not vaccinated, but the mother reported that the child had a mild case of chickenpox when she was five or six years old. It was also reported that a number of chickenpox cases were occurring at the child's school, and therefore the school exposure is considered the likely source of infection for this case.

Seven deaths due to varicella have been reported in Indiana from 1997 to 2002. During the four-year period from 1997-2000, a mean of 125.5 hospitalizations resulting from varicella infection has been reported through the Indiana Hospital Discharge Data-

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base.

According to the latest National Immunization Survey (Quarter 1, 2001 - Quarter 4, 2001), 58.9% of infants 24 months of age born in Indiana from February 1998 to May 2000 were vaccinated with varicella vaccine. In the United States, 76.3% of infants of the same age group were vaccinated with varicella vaccine . . . .

Efforts to increase routine and catch-up varicella vaccination among children should include educating health-care providers that deaths and severe morbidity from varicella are preventable. Policies that delay vaccination of susceptible children until adolescence accept the considerable disease burden that occurs among children 2-11 years of age. The most effective strategy focuses on vaccinating children routinely at 12-18 months of age and vaccinating all susceptible older children and adolescents. Children have the highest disease incidence and are the group that serve as the primary source of transmission of varicella to groups at higher risk for severe disease, including adults and persons not eligible for vaccination. Most deaths and severe morbidity from varicella in children and adults can be prevented by implementing recommended policies for childhood vaccination.

IAC Editor's note: The article reports that Indiana's varicella vaccine coverage rate for two-year-old children is currently 17% below the national rate. In addition Indiana has no varicella prevention mandate. Given these circumstances, this child's death points to the need to expand school-entry laws for varicella vaccination. Currently, 27 states require varicella vaccination for children entering elementary school in the 2002 school year.