they had connected with often followed."

Despite the usually frantic pace of activity in the NICU, the staff took the flu shot endeavor quite seriously and managed to find the time to talk often with the parents. "We kept track of who was and who was not getting the shots, and we would talk to the ones who had not—to see if they had any questions or concerns that we could address."

Among the 11 who refused the vaccine, 5 stated that they simply did not believe in immunization, and 2 said they feared that the shots might induce autism. Others cited religious objections or a reluctance to add anything else to whatever medical care they were already receiving. One cited an allergy to eggs, which is a legitimate concern since the vaccine contains some egg proteins.

Overall, the NYU NICU-based flu shot program was highly successful. Dr. Shah and colleagues are hoping to do a follow-up to see if the program had any impact on the rate of influenza among the neonates. He cautioned, however, that the sample size may be too small to support any definitive conclusion.

This pilot program did, however, prove that flu shots can be effectively distributed in the NICU setting to parents who for a variety of reasons had not previously gotten immunized. The program created very little additional strain on NICU physicians or nursing staff.

"Administration of the trivalent vaccine is very possible in a busy NICU, and implementation markedly increased compliance with recommendations aimed at protecting high-risk neonates," Dr. Shah told conference participants. "There will always be a small subset of parents who will refuse, no matter what. But we can get to many parents who are willing to take the shots." He added that this type of program is highly replicable and could be quickly implemented in any family-centered NICU. ■

Influenza Often Missed as a Clinical Dx

BY JOHN R. BELL
Associate Editor

In a prospective analysis of data from children who had laboratory-confirmed influenza, researchers found that most influenza cases were not recognized clinically, and the resulting symptoms were treated on an outpatient basis far more often than through inpatient care.

Dr. Katherine A. Poehling of Vanderbilt University, Nashville, Tenn., and her colleagues reported data from the New Vaccine Surveillance Network, organized by the Centers for Disease Control and Prevention, in which they observed hospitalizations and pediatric clinic visits resulting from acute respiratory illness or fever in children younger than 5 years who were living in one of three U.S. counties during 2000-2004 (N. Engl. J. Med. 2006;355:31-40).

They found that among the outpatient population of 1,668 children, 16% (267 children) tested positive for influenza, compared with less than 6% (160 children) of the 2,797 in the inpatient group. However, discharge diagnoses identified influenza in only 17% of outpatients and 28% of hospitalized patients with laboratory-confirmed influenza.

Outpatient care was overwhelmingly predominant in the study cohort. During the 4-year study period, the average hospitalization rate for all included age groups was 1 per 1,000 children, and outpatient treatment rates for each group (younger than 6 months, 6 months to 1 year old, and 1-2 years old) were 10, 100, and 250 times higher than the rates of hospitalizations, respectively.

Moreover, the investigators found that laboratory-confirmed flu infections accounted for more than 10% of weekly clinic visits for acute respiratory tract infection or fever during the 2002-2003 flu season and more than 19% of such visits during the 2003-2004 season. In the emergency department, laboratory-confirmed flu infections accounted for nearly 6% of weekly visits for acute respiratory tract infection or fever in 2002-2003 and 29% of such visits in 2003-2004.

"Much of this influenza disease burden may be prevented through vaccination," the researchers wrote. Influenza vaccination for all children aged 6-23 months was recommended beginning in 2004.

Notably, younger patients had greater influenza incidence. In the hospitalized patients, 80% were younger than 2 years and 49% were younger than 6 months. In the outpatient group, 47% were younger than 2 years, and 7% were younger than 6 months.

In an accompanying editorial, Dr. W. Paul Glezen of Baylor College of Medicine, Houston, observed that uninsured families, who compose almost one-fifth of the U.S. population, were underrepresented in the study, which might have contributed to artificially low hospitalization rates in the study (N. Engl. J. Med. 2006;355:79-81). ■