

EPI CONNECTIONS

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A Bimonthly Newsletter of the Communicable Disease Division

When It's Not Okay to Jump on the Bandwagon

The National Immunization Survey (NIS) is an annual study that provides timely estimates of vaccination coverage rates for all childhood vaccinations recommended by the Advisory Committee on Immunization Practices. The NIS began collecting data in April 1994, utilizing a random-digit-dialing telephone survey followed by a mailed survey to children's immunization providers.

In August 2007, the Centers for Disease Control and Prevention (CDC) published the results of the 2006 NIS. Overall, the national rate of children 19 to 35 months of age who received 4 doses of DTaP, 3 doses of poliovirus vaccine, 1 dose of MMR, 3 doses of Hib, 3 doses of HepB vaccine, and 1 dose of varicella vaccine (termed the 4:3:1:3:3:1 series) was 77.0%. The proportion of Colorado children within this age range who had received the 4:3:1:3:3:1 series was 75.9%. Colorado's coverage level was ranked 28th among states, with Massachusetts being the highest ranked state at 83.6%, and Nevada the lowest at 59.5%; 11 states had immunization rates \geq 80%.

While NIS provides coverage levels for some larger urban areas in the U.S., it does not provide rates for any specific county in Colorado. Therefore, Boulder County Public Health (BCPH) conducted its own county-wide immunization rate assessment in 2006. Seventy-four percent of Boulder County physicians who routinely provide childhood immunizations participated in the study. Each physician or practice supplied a complete list of their patients, aged 19 to 35 months as of 12/31/05. A statistically significant sample of 1,614 records was randomly selected and constituted 15% of eligible children in Boulder County. Similar to the NIS-mailed physician surveys, immunization records for each randomly selected child were collected and analyzed, and ultimately, it was found that the Boulder County immunization rate was 60.4% for the 4:3:1:3:3 series (NIS found Colorado's 4:3:1:3:3 rate to be 83.4% in 2005).

A number of strategies were considered by the Boulder County Immunization Coalition to improve Boulder County's childhood immunization rate, such as promoting the Colorado Immunization Registry and highlighting the benefits of reminder/recall. The Coalition also looked to states with similarly low rates and found that New Mexico, Oklahoma, Louisiana, and Kansas had adopted an accelerated childhood immunization schedule. With this approach, all immunizations are given at the minimum interval and/or

youngest age recommended by CDC and the American Academy of Pediatrics (AAP). The entire 4:3:1:3:3 series can theoretically be completed by the time the child is 12 months of age. The principal targets of this public health strategy are physicians and other health care providers because they must collaborate with the parents to make it work.

For public relations and information purposes, this strategy has been coined "Done by One." As 70% of states in 2006 recorded the 4th DTaP as having the lowest coverage level in the 4:3:1:3:3 series, the logic of the "Done by One" method is to target the dose primarily responsible for lowering rates. The 4th DTaP is normally administered at 15 to 18 months of age, but no regularly scheduled well baby visit coincides with the timing of this dose. However, since most children receive a well baby check-up at 12 months of age, the 4th DTaP could be administered at that time, and the child would be up-to-date.

The New Mexico Immunization Program presented data at the 2006 National Immunization Conference indicating that the 4:3:1:3:3 and 4th DTaP immunization rates among 2-year-olds had risen substantially more in clinical practices using "Done By One," compared to practices not using the strategy over a 2-year period from 2003-2005.

The BCPH Communicable Disease Division recently re-examined the 2006 baseline immunization survey described above to test whether a "Done by One" strategy could work in this county. The findings were as follows:

DTaP

- 76% of infants received the 2nd DTaP by 5 months of age
- 65% of infants received the 3rd DTaP by 7 months of age
- 8% of infants received the 4th DTaP by 13 months of age
- 56% of infants received the 4th DTaP by 19 months of age
- 65% of infants received the 4th DTaP by 24 months of age

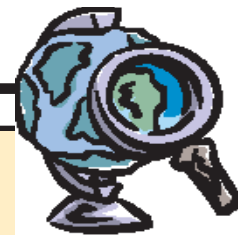
IPV

- 47% of infants received the 3rd IPV vaccine by 7 months of age

Hib

- 24% of infants received the 3rd Hib vaccine by 7 months of age





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HepB

- 26% of infants received the 3rd HepB vaccine by 7 months of age

It was evident from these analyses that "Done by One" would not be an effective strategy due to the following sequence of events. First, many children were delayed in their initiation of the recommended schedule. By starting late, the children would not be eligible to receive the next shot at their regularly scheduled visit due to the minimum intervals required between many vaccine doses.

Second, the issue was further complicated, as the next regularly scheduled visit could be months away. As a result, Boulder County children were more likely to have the most prominent drop in coverage levels between the 2nd and 3rd doses occurring at the 5- and 7-month well baby visits.

Finally, as the children were already behind from the beginning, or were late at any time during the schedule, then the 4th DTaP could not be administered at the 12-month visit, usually because the children needed an earlier dose, or the minimum interval between doses had not been met. In Boulder County, 35% of children in the rate study were not eligible to receive the 4th DTaP at 12 months, and only 8% of children did receive it prior to 13 months.

For the reasons stated above, it would not be helpful to urge clinicians to implement this strategy. Thus, the Boulder County Immunization Coalition decided not to pursue this strategy, an example of using local data to drive local policy (in this case, not implementing a policy being used by a number of states in the region).

The Coalition continues to work for funding and implementation of a comprehensive Colorado Immunization Registry, use of reminder/recall systems, and public information to promote immunizations.

References:

1. The Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report*, 2007; 56:880-885.
2. BCPH. Boulder County Immunization Rate Study, 2006

Epi-Eye

A Look Outside Our Community and Around the World

Norovirus Outbreaks on the Rise

In late 2006, the CDC began receiving requests from numerous state public health departments for information about a perceived increase in the number of outbreaks of acute gastroenteritis (AGE). After initial analysis, the CDC reported an increase in almost every state, resulting in a 254% national increase in the frequency of AGE outbreaks caused by norovirus. Two new co-circulating norovirus strains emerged nationwide in 2006 and likely accounted for this increased activity.

Improved national surveillance of outbreaks, including those with person-to-person transmission; development of accessible, affordable, and timely clinical tests; and increased access to a norovirus strain sequencing database at CDC, will lead to more accurate assessment of the morbidity and mortality associated with norovirus, and more rapid identification of newly emerging norovirus strains.

In Colorado, outbreaks of norovirus increased 283% from 2005 to 2006; Boulder County has also seen an increase in norovirus in child care settings and food service facilities. Please see the reference below for recommendations on preventing norovirus outbreaks in our community.

Reference: *MMWR* August 24, 2007/6(33);842-846

Recommended Measures for Prevention and Control of Norovirus Infection

1. Practice good hand hygiene.
 - a. Wash hands frequently with soap and water.
 - b. Alcohol-based sanitizing hand gels ($\geq 62\%$ ethanol content) may be used to complement hand washing with soap and water.
2. Disinfect contaminated surfaces with either of the following methods:
 - a. Use a chlorine bleach solution with a concentration of 1,000-5,000 ppm (1:50-1:10 dilution of household bleach [5.25%]) for hard, nonporous surfaces.
 - b. Use disinfectants registered as effective against norovirus by the Environmental Protection Agency (EPA)* in accordance with the manufacturers' instructions.
3. Do not return to work or school until 24-72 hours after symptoms resolve, and practice good hand hygiene after returning.
4. Additional measures for outbreaks in health care and long-term care facilities include the following:
 - a. Use contact precautions for preventing gastroenteritis.
 - b. Avoid sharing staff members between units or facilities with affected patients and units, or facilities that are not affected.
 - c. Group symptomatic patients and provide separate toilet facilities for ill and well persons.
 - d. Instruct visitors on appropriate hand hygiene and monitor compliance with contact isolation precautions.
 - e. Close affected units to new admissions and transfers.

*List of EPA-approved products available at http://www.epa.gov/oppad001/list_g_norovirus.pdf. Evidence for efficacy against norovirus is usually based on studies using feline calicivirus (FCV) as a substitute for norovirus. FCV and norovirus have different physiochemical properties, and whether inactivation of FCV reflects efficacy against norovirus is unclear.