

# STD Rates Continue to Increase in Select Groups

BY HEIDI SPLETE  
Senior Writer

Rates of chlamydia, gonorrhea, and syphilis increased in the United States during the past year and continued recent upward trends, according to a report from the Centers for Disease Control and Prevention.

"Young women, racial and ethnic populations, and men who have sex with men are particularly hard hit by these diseases," Dr. John M. Douglas Jr., director of the CDC's Division of Sexually Transmitted Disease Prevention, said in a teleconference sponsored by the CDC.

The report emphasizes both the magnitude of the diseases and the persistent racial disparity, Dr. Douglas said.

All three diseases are treatable, especially when they are diagnosed early. If left untreated, however, the severe health consequences include pelvic inflammatory disease, infertility, increased risk for HIV infection, organ damage, and death. The direct medical costs associated with STDs in the United States were estimated at nearly \$15 billion in 2006, the researchers stated in the report, "Sexually Transmitted Disease Surveillance 2006," which was presented in a telebriefing.

Of the three diseases, the increased chlamydia rates represent the greatest public health impact, said Dr. Douglas.

In 2006, the national rate of reported cases of chlamydia increased by 5.6% from 2005 to 2006. Specifically, the reported rate was 347.8 cases per 100,000 persons in 2006, compared with 329.4 cases per 100,000 persons in 2005. The increase may reflect increased screening for chlamydia and improved diagnostic tests, but it likely also reflects an increase in the number of infections, the researchers said.

Chlamydia hits hardest among adolescent girls and young women—the highest chlamydia rate was reported in young women aged 15-19 years (2,863 cases per 100,000 persons) followed by women aged 20-24 years (2,797 cases per 100,000 persons). And racial disparity is high: The chlamydia rate was highest among black women, whose rate was more than seven times higher than that of white women and more than twice as high as that of Hispanic women.

Because of the high rate of chlamydia in young women, the CDC recommends screening sexually active women younger than 26 years for the disease. Chlamydia screening is also recommended for older women with new or multiple sex partners, because these women are also at increased risk. Based on recent studies showing that chlamydia reinfection can occur in women whose partners remain untreated, the CDC's treatment guidelines include retesting patients 3 months after treatment.

Screening is one of the most effective and underutilized tools to prevent and treat chlamydia in all populations, Dr. Douglas emphasized. "Providers know

the recommendations but don't assume that it applies to the population that they are dealing with," he said.

"If there are providers who don't think the young women in their practice don't have chlamydia, they should think again," noted Dr. Stuart Berman, chief epidemiologist at the Division of Sexually Transmitted Disease Prevention.

Gonorrhea rates increased for the second consecutive year, following a plateau in reported disease rates from 1997 to 2005. "The racial disparities are stark," in reported gonorrhea cases, Dr. Douglas said. Overall, the rate among blacks is 18 times higher than in whites, he said.

Gonorrhea rates also continue to vary by region. As in previous years, the southern region of the United States had the highest overall gonorrhea rate in 2006, at 159 cases per 100,000 persons. But rates in the South rose by 12.3% in 2006, representing the first notable increase in 8 years.

"We are also concerned about increases in the West," Dr. Douglas said. Gonorrhea cases in the West increased by 2.9% between 2005 and 2006, contributing to a 32% increase between 2002 and 2006. "We will need to monitor the data to determine whether this is an emerging trend."

Untreated gonorrhea can, among other complications, increase a person's risk for HIV if he or she is exposed. But gonorrhea treatment has become more challenging, because evidence of fluoroquinolone resistance—especially among men who have sex with men—prompted the CDC in April 2007 to stop recommending fluoroquinolones as treatment for any gonorrhea cases. As an alternative, the CDC recommends cephalosporins to treat gonorrhea.

Rates of primary and secondary syphilis rate in the United States increased by nearly 14% from 2005 to 2006, but the most notable increase has occurred among men who have sex with men. Syphilis rates among that group increased by 54% from 2002 to 2006, Dr. Douglas said.

Although syphilis has the least impact on the population as a whole, the rise in reported cases for the sixth consecutive year in women and men is cause for concern, Dr. Douglas said, given a steady decrease during the 1990s.

Overall, the recent rises in reportable STD rates speak to the need for more awareness among the public and health care providers about screening and prevention, said Dr. Douglas.

The report's data provide an incomplete picture of sexually transmitted diseases in the United States, the researchers cautioned, because many cases of chlamydia, gonorrhea, and syphilis are not reported. In addition, some types of STDs, including genital herpes and human papillomavirus, are not tracked by the CDC but contribute to the overall disease burden of STDs, he noted. "These are large numbers of infections, and this is a hidden epidemic that people are not aware of," added Dr. Berman.

To view the complete report, visit [www.cdc.gov/std/stats](http://www.cdc.gov/std/stats). ■

# Two- and Three-Dose PCV7 Schedules Aren't Equivalent

BY BRUCE K. DIXON  
Chicago Bureau

CHICAGO — Trimming the septivalent pneumococcal conjugate vaccine schedule from three prebooster doses to two may leave children more vulnerable to infection, according to data presented at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

"Our study demonstrates that the reduced two-dose schedule at age 4 and 6 months cannot be regarded as equivalent to the licensed three-dose schedule at 2, 4, and 6 months," said Dr. Ron Dagan, who presented the results of an ongoing, open-label randomized trial that was launched in 2005.

"The two-dose schedule resulted in significantly lower antibody concentrations to four vaccine serotypes compared with the three-dose licensed schedule, and the most impressive observed difference in immunogenicity was serotype 6B, which has cross-protection with 6A," said Dr. Dagan of the pediatric infectious disease unit at Soroka University Medical Center, Ben-Gurion University, Beer-Sheva, Israel.

In its April 2007 meeting, the Immunization Strategic Advisory Group of Experts of the World Health Organization concluded that the number of doses required in primary vaccination schedules was not completely understood, though some evidence suggested that two doses in infancy were likely to be as

good as three. They added that for pneumococcal conjugate vaccines, there may be differences in immunogenicity for some serotypes, Dr. Dagan explained.

"Despite the lack of knowledge, there is a tendency by some authorities to state that two and three doses of PCV7 in the primary immunization series—during the first year of life—are equivalent," he said at the conference, which was sponsored by the American Society for Microbiology.

This study included healthy children aged 2 months, plus or minus 3 weeks, with parental informed consent. Exclusion criteria included prematurity (less than 35 weeks), acute disease, any chronic condition not permitting evaluation of the vaccine, prior administration of pneumococcal vaccine, known allergies related to vaccine constituents, and any contraindication to concomitant vaccines.

The children were randomized 2:1:1 to three groups:

- ▶ Group 1: Licensed schedule of PCV7 at 2, 4, and 6 months.
- ▶ Group 2: Reduced-dose schedule of PCV7 at 4 and 6 months.
- ▶ Group 3: Unvaccinated (received the vaccine at 12 and 18 months).

Blood samples were refrigerated up to 8 hours until processed and serum was kept at  $-70^{\circ}\text{C}$  until tested. Serum

serotype-specific pneumococcal anticapsular IgG concentrations were tested by enzyme-linked immunosorbent assay after double absorption with C-polysaccharide and 22F-polysaccharide. Nasopharyngeal (NP) and oropharyngeal (OP) specimens were obtained by transport swabs and cultured within 16 hours, and OP results were reported only if *Streptococcus pneumoniae* was not isolated from the NP, Dr. Dagan said.

The postprimary serum analysis of geometric mean concentrations included 259 infants in the three-dose group and 133 infants in the two-dose group.

The three-dose group had four times more antibodies to serotype 6b (2.05 mcg/mL versus 0.55 mcg/mL) than was seen in the two-dose group. For serotype 14 the difference was 5.16 mcg/mL versus 3.54 mcg/mL; for 18C, 1.65 mcg/mL versus 1.23 mcg/mL, and 23F levels were twice as high in the three-dose group at 1.08 mcg/mL versus 0.64 mcg/mL.

The Israeli scientists also found that a significantly higher proportion of three-dose subjects vs. two-dose subjects reached the cutoff serum anticapsular IgG concentration of 0.35 mcg/mL for serotypes 6B (87% versus 61%), 18C (96% versus 90%), and 23F (83% versus 70%).

In this analysis, they also used a cutoff of 1.0 mg/mL, which is favored by some physicians. Here again, the values were significantly higher in the three-dose group for 6B (71% versus 35%), 18C (75% versus 65%), and 23F (54% versus 33%).

The prevalence of 7-valent pneumococcal serotypes carriage remained unchanged for the first 6 months, but at 1 year, nearly one-third of the unimmunized children were carrying the serotypes, whereas about one-fifth of both vaccinated groups had carriage.

In the primary intervention schedules, there was a clear and significant reduction of new NP acquisition of both serotypes 6A and 6B in the three-dose cohort at 12 months, whereas no such reduction could be demonstrated in the two-dose group.

Serotype 6B was acquired by 9% of unvaccinated children, 7% of those who received two doses, and 4% of those in the three-dose group, with the *P* value reaching significance between the three-dose and no-vaccine groups.

Serotype 6A was a different story, showing up in about 9% of both the unvaccinated and two-dose children, but only 4% of the three-dose group. More than 15% of unvaccinated children acquired either 6A or 6B.

"Serotype 6A acquisition is influenced by 6B antibody concentration, but you need more antibodies of anti-6B to influence 6A, so we speculated that 6A may be even more affected and this is exactly what happened," Dr. Dagan said. ■

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