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Stephen A. Harriman, Commissioner

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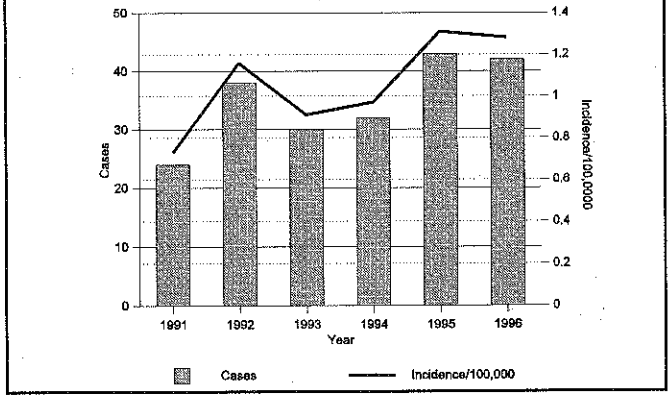
Serogroup Y Meningococcal Disease Connecticut, 1991 - 1996

Neisseria meningitidis is a leading cause of bacterial meningitis and sepsis in the United States. *N. meningitidis* is classified into serogroups based on the antigenic characteristics of its capsular polysaccharide. During 1989 - 1991 in the United States, serogroups B and C accounted for most (91%) of invasive meningococcal disease while serogroup Y caused less than 5% (1); however, during 1992-1995, serogroup Y accounted for an increasing proportion of meningococcal disease (2). This report describes the epidemiology of serogroup Y meningococcal disease (SYMD) during 1991-1996 in Connecticut. The findings indicate a substantial increase in the proportion of meningococcal disease caused by *N. meningitidis* serogroup Y during this period.

From January 1991 through December 1996, a total of 209 culture-confirmed cases of invasive *N. meningitidis* infection were reported to the Connecticut Department of Public Health (Figure 1). The overall annual incidence of culture-confirmed cases ranged from 0.7 to 1.3 per 100,000 population. Of the 166 isolates for which serogroup was known, 75 (45%) were serogroup C; 46 (28%), serogroup Y; 42 (25%), serogroup B; two (1%), serogroup W-135; and one (1%) serogroup E. The proportion of SYMD increased from 6% in 1991 to 38% in 1996. Of the 40 case-patients with SYMD identified since 1994, 24 (60%) were female. The median age for patients with SYMD was 28 years, compared with 14 years for patients with disease caused by non-SYMD. Three case-patients (8%) died.

Figure 1
Culture Confirmed Cases of Meningococcal Disease
Connecticut, 1991 - 1996



Editorial Note: During the 1970s, SYMD was recognized as a common cause of endemic disease in some U.S. populations (3,4) and was associated with several outbreaks in military personnel (5-7). During 1978-1981, SYMD caused 7% of meningococcal cases reported through a nationwide surveillance system in which 27 states participated (8). Although SYMD accounted for only 2% of endemic disease in U.S. active surveillance areas during 1989-1991 (1), by 1995 the proportion of infections caused by SYMD had increased in Connecticut, Illinois, and in other active surveillance areas (2). In 1995, 30 states reported supplemental data on culture-confirmed cases of meningococcal disease to the Centers for Disease Control and Prevention (CDC) through the National Electronic Telecommunications System for Surveillance (NETSS) (9). Among these 30 states serogroup information was recorded for 527 (54%) of 973 cases reported, and serogroup Y accounted for 21% of cases. This pattern underscores the need to both determine and report serogroup information for all cases of meningococcal disease.

The finding in this report that patients with SYMD in Connecticut were older than patients with disease caused by non-serogroup Y meningococci is consistent with cases reported to the CDC through NETSS. One possible explanation for this and the increase in SYMD is waning population immunity against SYMD. However, the increase in SYMD also may reflect, in part, the emergence of a distinct clone that differs in peptidase motility, as characterized by multilocus enzyme electrophoresis. Although the association between epidemic meningococcal disease and clonality has been clearly established, the possible relation between shifts in endemic disease serogroup distribution and emergence of particular clones requires further assessment.

The clinical illness associated with SYMD differs from that of the other serogroups. In particular, findings from active laboratory-based surveillance areas indicated that pneumonia was more common among patients with SYMD (2), consistent with studies in some military populations (5,6). Meningococcal pneumonia may not be diagnosed because isolation of the organism from the sputum cannot distinguish persons who are meningococcal carriers from those with pneumonia caused by this organism, and because physicians may not consider *N. meningitidis* as a possible cause of pneumonia. As a result, infections that occur in the absence of meningitis or bacteremia may be missed and appropriate preventive measures not taken.

The current meningococcal vaccine (Conaught Laboratories, Swiftwater, Pennsylvania), which contains purified polysaccharide capsules of serogroups A, C, W-135 and Y, has been effective in controlling serogroup C outbreaks and may be useful in controlling a SYMD outbreak. However, this vaccine has not been used to control endemic disease because its immunogenicity is low in young children and immunity is of limited duration. Conjugated vaccines for serogroup C, which are similar to those now available for preventing *Haemophilus influenzae* type b, are being evaluated in safety and immunogenicity trials (10). Because of the increased proportion of SYMD, manufacturers should consider developing a serogroup Y conjugate component for controlling endemic meningococcal disease.

[Adapted from MMWR 1996;45:1010-13.]

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Chlamydia - Connecticut, 1992 - 1996

Genital tract infections with *Chlamydia trachomatis* are a major cause of pelvic inflammatory disease (PID), ectopic pregnancy, and infertility among women. Perinatal transmission of *C. trachomatis* to infants can cause neonatal conjunctivitis and pneumonia (1). In Connecticut, chlamydial infections became laboratory and clinician reportable on July 1, 1990. The number of cases has declined each year since 1992, although chlamydial infection rates are still well above the Centers for Disease Control and Prevention (CDC) year 2000 objective of 170 cases per 100,000 population.

In 1996, the chlamydial infection rate was 191 cases per 100,000 Connecticut residents, a 3% decrease from the rate in 1995. Chlamydial

infections occurred most frequently in minorities (Figure 1), in individuals between the ages of 15 and 24 (Figure 2), and in residents of the state's three largest cities (Figure 3).

Of the 6,269 cases reported in 1996, 1,239 (20%) involved residents of Hartford. Other cities with large percentages of the state's morbidity were: New Haven, 13% (797 cases); Bridgeport, 9% (581 cases); Waterbury, 6% (393 cases); New Britain, 4% (255 cases); and Stamford, 3.5% (221 cases). New Haven was the only one of the cities listed above to experience an increase in chlamydial infections in 1996 (566 cases reported in 1995). Of the state's 169 municipalities, 117 reported 10 or fewer cases of chlamydial infection in 1996. City or town of residence was not reported for 373 cases.

Most chlamydial infections are detected through screening of asymptomatic women. Thus, statewide infection rates could reflect, in part, intensity of such screening. Analysis of prevalence data from stable screening sources over time in Connecticut suggests a progressive decrease in prevalence in women in correctional facilities, in family planning clinics, and in STD clinics (Figure 4). These findings and the statewide incidence data suggest that the incidence and prevalence of chlamdial infections have been decreasing in the past few years in Connecticut.

Editorial Note: In the United States, chlamydial infection is the most common infectious disease notification to state health departments and the CDC (2). During 1987–1995, the annual reported rate of chlamydial infections increased 281% (from 47.8 to 182.2 cases per 100,000), while the number of states that require reporting of this infection increased from 22 to 48 (1). In 1995, a total of 477,638 cases of chlamydial infection were reported to the CDC, representing a rate of 182.2 cases per 100,000 population. State-specific rates for women ranged from 46.4 to 622.0 per 100,000; rates were highest in western and midwestern states. The overall reported rate for women (290.3) was nearly six times higher than that for men (52.1).

The sustained high rates of chlamydial infections among United States women primarily reflect chlamydial infections identified during screening of asymptomatic women (1). The low reported rate of chlamydial infection among men reflects low rates of testing among this group; most men with cases of chlamydial urethritis are treated for presumptive infection without confirmatory microbiologic testing, often as the result of a Gram-stain diagnosis of nongonococcal urethritis.

In 1993, the CDC recommended routine screening for chlamydia in all sexually active females aged <20 years at least annually, and annual screening of women aged $\geq$ 20 years with one or more risk factors for this disease (i.e., lack of barrier contraception and new or multiple sex partners during the preceding 3 months) (3). As an alternative to risk-based criteria such as these, some public health programs can obtain comparable sensitivity and test a similar proportion of female clinic patients by screening all sexually active women aged <30 years (CDC, unpublished data, 1996). In 1997, a new Health Plan Employer Data Information Set (HEDIS) measure will evaluate use of a quality-assurance criterion for screening of all sexually active women aged <25 years enrolled in managed-care organizations (4).

Despite availability of nonculture diagnostic tests for chlamydia since the 1980s , many sexually active women at risk for chlamydial infection in the United States have not been screened annually—in part because they are not offered testing by their public or private health-care provider. Declining test prices and a new generation of DNA-amplification tests that can be performed on urine may facilitate more widespread screening for this infection. Chlamydial infections can be readily and effectively treated, using 1 g azithromycin orally in a single dose or 100 mg doxycyline orally twice daily for 7 days (5).

[Adapted from MMWR 1997;46:193-8]

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Figure 1

Chlamydia Rates by Race/Ethnicity
Connecticut, 1992-1996

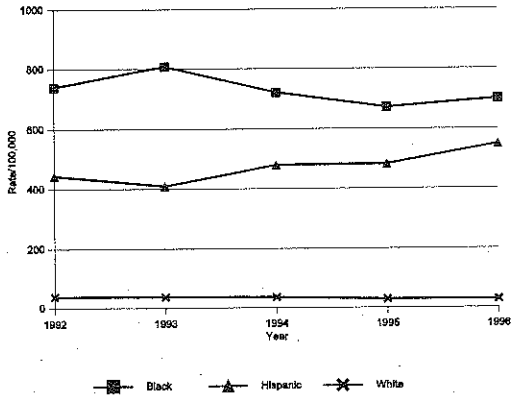


Figure 2

Average Annual Chlamydia Rates
by Age Group, Connecticut, 1992-1996

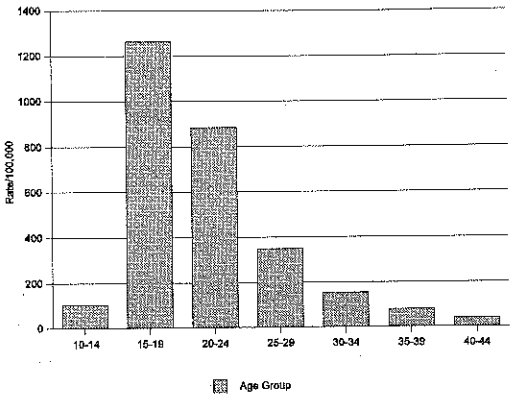


Figure 3

Chlamydia Rates, Bridgeport, Hartford, New Haven,
Rest of Connecticut, 1992-1996

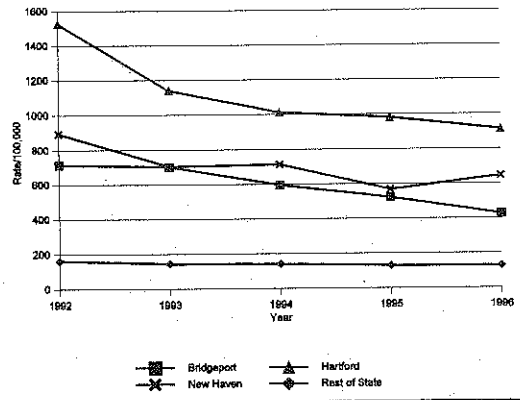
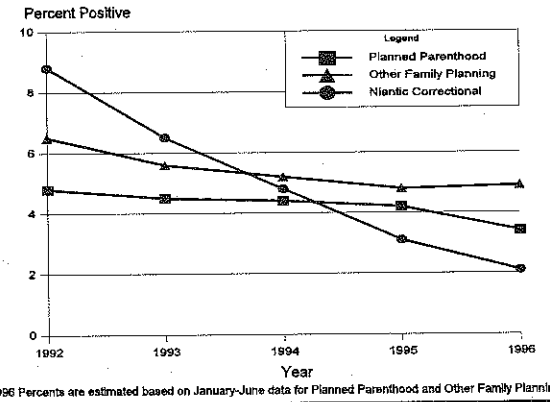


Figure 4

Chlamydia Prevalence by Selected Providers
Connecticut, 1992 - 1996*



* 1996 Percents are estimated based on January-June data for Planned Parenthood and Other Family Planning.

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