

Evaluation of Sexually Transmitted Disease Control Practices for Male Patients With Urethritis at a Large Group Practice Affiliated With a Managed Care Organization—Massachusetts, 1995-1997

MMWR. 2001;50:460-462

Effective management for sexually transmitted diseases (STDs) depends on appropriate testing, treatment, partner management, and complete and timely reporting of positive STD tests.1 Testing can ensure appropriate treatment of initial or recurrent infections and identification of drug-resistant pathogens, appropriate treatment can reduce risk for complications and development of drug resistance, and complete and timely reporting of positive test results by laboratories and STD cases by health-care providers to health departments can facilitate rapid sex partner notification and outbreak detection. By 1998, private providers, including those affiliated with commercial or Medicaid managed care organizations (MCOs)2,3 were caring for approximately 70% of persons with chlamydia and 55% of persons with gonorrhea. To assess the quality of STD care at a MCO-affiliated multisite facility, the testing, treatment, and reporting practices of gonorrhea- and chlamydia-associated urethritis in male patients were evaluated. This report summarizes the evaluation, which indicated that the providers tested most men with urethritis symptoms, prescribed CDC-recommended therapy to all patients, and reported most laboratory-confirmed chlamydia and gonorrhea cases of urethritis to the state health department. Several interventions introduced at this large group practice may have encouraged these favorable STD practices.

Harvard Vanguard Medical Associates (HVMA), Massachusetts Department of Public Health (MDPH), and CDC evaluated a HVMA staff model component of Harvard Pilgrim Health Care during 1995-1997, when most staff in this multispecialty practice tested urethral specimens for chlamydia using enzyme immunoassays and for gonorrhea using culture. The MCO's formulary covered the CDC-recommended drugs for gonorrhea- and chlamydia-associated urethritis, including more expensive single-dose treatments.4 Each week day, HVMA-affiliated laboratories electronically transmitted positive test results to the patient's physician and the HVMA infection control (IC) practitioner responsible for case reporting; treatments were listed on the test result notice.4 By reviewing the electronic pharmacy file and the electronic and paper medical records, the IC practitioner determined whether treatment was prescribed or dispensed within 10 days after the test was ordered. A copy of the case report then was mailed to MDPH and the patient's physician. The physician's copy included CDC-recommended treatments to encourage appropriate future treatment decisions.

To evaluate testing and treatment practices during visits for symptomatic urethritis in men, 2247 medical records were identified in which diagnoses assigned during the visit included urethritis, nongonococcal urethritis, urethral discharge, dysuria, or urethritis/chlamydia.5 Of the 2247 cases, 1988 (88%) were coded as urethritis and/or nonspecific urethritis. Fifteen (9%) tested for gonorrhea and 8% with chlamydia were prescribed or dispensed within 10 days after the test was ordered. A copy of the case report then was mailed to MDPH and the patient's physician. The physician's copy included CDC-recommended treatments for gonorrhea and chlamydia; the remaining men were prescribed treatment within 5 days of initial presentation. Among urethritis-associated cases, 11 (69%) of 16 positive for chlamydia and 14 (93%) of 15 positive for gonorrhea were matched with the MDPH database. Among the 196 cases of symptomatic urethritis sampled, 181 (92%) were tested for chlamydia infection, 163 (83%) for gonorrhea infection, or 161 (82%) for both infections. Sixteen (9%) specimens tested for chlamydia were positive. Fifteen (9%) tested for gonorrhea were positive. No specimen tested positive for both infections. All men with gonorrhea and 88% with chlamydia were prescribed CDC-recommended antibiotics when they initially presented with symptoms (before test results were available); the remaining men were prescribed treatment within 5 days of initial presentation. Among urethritis-associated cases, 11 (69%) of 16 positive for chlamydia and 14 (93%) of 15 positive for gonorrhea were matched with the MDPH database. Among the 393 cases positive for chlamydia or gonorrhea, 158 (78%) of 202 chlamydia cases and 156 (82%) of 191 gonorrhea cases in the HVMA database were matched with the MDPH database. Reports were entered into MDPH's database within a median of 16 days (range: 1-208 days) after specimen collection.

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interventions follow the CDC recommenda-
tions.1 Interventions at HVMA may have
delayed or deferred diagnostic testing
because of cost constraints.7 HVMA-
sponsored STD education for the
provider and feedback from patients
may have promoted testing at this prac-
tice. Introduction of more acceptable
urine-based STD tests also may have
increased testing rates.

The finding that most providers pre-
scribed CDC-recommended treat-
ments for urethritis5,6 was not consist-
tent with anecdotal reports that MCO-
affiliated providers may defer expensive
single-dose treatments that may im-
prove patient adherence because of cost
or formulary constraints.7 Interven-
tions at this group practice that may
have encouraged use of CDC-recom-
manded treatments stemmed from col-
laboration with MDPH, which resulted
in having these drugs available in the
MCO formulary, listing CDC-recom-
manded treatments on positive test re-

tests that did not require provider time; (2)
including electronic transfer of test results to the

estimated mortality among children aged
and T. national measles vaccination.
measles incidence.5 In Zambia, a Sub-
Saharan African country (2000 population: nine mil-
that may have resulted in an underesti-

countries, and training and other

Some features of staff model prac-
tics, such as centralized local labora-
tories, may not be available in nonstaff
model practices that now dominate the
U.S. market. However, other features,
such as dissemination of guidelines, may
be easily implemented in other set-
tings. Interventions to enhance STD con-
trol and surveillance can capitalize on
the strengths of MCOs, specifically their
coverage of large populations of persons
at risk, affiliations with large num-
bers of health-care providers, and use of
centralized data systems, procedures,
guidelines, and policies. Comparative
evaluations of MCO-affiliated prac-
tices that use different methods to pro-
mote appropriate testing, treatment, and
reporting of STDs are needed to iden-
tify the most effective interventions in
these settings.

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Measles Incidence
Before and After
Supplementary Vaccination
Activities—Lusaka,
Zambia, 1996-2000

MMWR. 2001;50:513-516
1 table, 1 figure omitted

ZAMBIA IS A SUB-SAHARAN AFRICAN
country (2000 population: nine mil-
ion) with approximately 10% of the
population residing in the capital of
Lusaka. In Zambia, measles is one of the
five major causes of morbidity and mor-
tality among children aged <5 years.
During 1991-1999, the annual num-
ber of reported measles cases ranged
from 1698 to 23,518. In August 1999,
supplementary vaccination activities
(SVAs) were conducted in Lusaka
among children aged 9 months-4 years.
This report summarizes measles inci-
dence, measured by the number of pa-
tients presenting to selected medical fa-
cilities, before and after SVAs and
suggests that substantial measles trans-
mission continued despite this inter-
vention. To improve measles control in
Zambia, nationwide supplementary
measles vaccination is planned for chil-
dren aged 9 months-14 years in 2002.

The routine vaccination program in
Zambia includes one dose of measles vac-
cine administered at age 9 months.
Reported national measles vaccination
coverage ranged from 93% in 1996 to
72% in 1999, with wide fluctuations
among districts. In Lusaka, reported vac-
cination coverage decreased from >95%
in 1996 to 54% in 1999 (Ministry of
Health, Zambia, unpublished data, 1999).
To accelerate measles control, SVAs
were conducted in four urban districts

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(Reprinted) JAMA, July 25, 2001—Vol 286, No. 4 411

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(Kabwe, Kitwe, Lusaka, and Ndola) that comprised approximately one fourth of the Zambian population. During August 20–23, 1999, measles vaccine for children aged 9–59 months, vitamin A for children aged 6–59 months, and oral poliovirus vaccine for children aged 0–59 months were administered during the second round of polio subnational immunization days. Measles vaccine was administered to 197,077 children regardless of prior measles vaccination or disease history. The reported measles vaccination coverage for the four urban districts combined was 81%; Lusaka district reported coverage of 83%.1

To assess the results of the 1999 campaign, a field investigation was conducted in Lusaka district. Attendance registers were reviewed for patients with measles seen during August 1996–September 2000 at the main city hospital and three health-care centers located in different areas of the city. Data on age, date of disease onset, date of admission, and mortality were abstracted. Because measles in partially immunized populations is a seasonal disease characterized by periodic epidemics, the impact of SVAs was assessed by comparing the annual number of measles cases, deaths, and the age distribution of these before and after SVAs. Three consecutive 12-month periods before SVAs were compared with one 11-month period after SVAs. The post- SVA period started 1 month after the vaccination campaign was conducted (i.e., September 23, 1999–August 22, 2000).

From September 23, 1996, through September 22, 1999, 2048 measles cases were recorded in Lusaka. The highest monthly incidence occurred during October 1996 and October 1998. Case counts for the pre-SVA periods during 1997, 1998, and 1999 were 900, 333, and 815, respectively; 496 cases were recorded during the post-SVA period.

Of the 2048 patients with measles during the pre-SVA period, 869 (42%) were aged 1–4 years. Following SVAs, among the 496 measles patients, 144 (29%) were aged 1–4 years (Chi-square test, p < 0.001). The number of measles cases among persons aged ≥15 years increased in each successive study period. The age distribution of measles patients was similar for both inpatients and outpatients. For the four study periods, clinical outcome (e.g., death) was available for 239 (27%) of 900 (1997), 249 (75%) of 333 (1998), 539 (66%) of 815 (1999), and 294 (59%) of 496 (2000) patients, respectively. Among patients with known outcome, 15 (6%), 22 (9%), 42 (8%), and 18 (6%) died during the four study periods. From September 23, 1996, through September 22, 1998, no measles deaths were recorded among persons aged ≥10 years; two deaths and three deaths were recorded in this age group in the two latter study periods, respectively.

CDC Editorial Note: During 1989-1990, the World Health Assembly and the World Summit for Children set goals of reducing measles morbidity by 90% and mortality by 95% compared with prevaccine estimates.2,3 Despite these goals and the existence of safe and effective measles vaccines for approximately 35 years, an estimated 30 million cases and 875,000 deaths are attributed to measles each year.4 In March 2001, the World Health Organization (WHO)/United Nations Children’s Fund Global Strategic Plan established a goal of reducing global measles deaths by 50% by 2005 compared with 1999 levels.5 Strategies to decrease measles deaths include (1) achieving and sustaining high population immunity through vaccination; (2) enhancing measles surveillance with integration of epidemiologic and laboratory surveillance; and (3) improving measles case management. The plan recommends that a second opportunity for measles vaccination be offered to all children either through regular SVAs or as a second dose in the routine vaccination schedule if coverage with the first dose of measles vaccine is >90%.

Although SVAs in Lusaka did not have a major impact on measles morbidity and mortality during the 11-month period following the intervention, the expected seasonal peak during September–December 1999 appears to have been blunted and the proportion of cases among persons aged 1–4 years was reduced. SVAs had limited impact for two major reasons. First, vaccination coverage during SVAs was <85%, and reported coverage may have overestimated actual coverage. In Burkina Faso, cluster surveys in six urban districts after SVAs in 1998 indicated that measles vaccination coverage was 15%-52% lower than reported coverage.6 Second, routine coverage declined during 1997-1999. Conducting SVAs in a setting where routine coverage is declining results in an increase in the number of susceptible infants.

Other possible reasons for the limited impact of SVAs in Lusaka are (1) only children aged 9–59 months were targeted for vaccination, and approximately 20% of reported cases occurred among persons aged ≥5 years; and (2) SVAs were limited to urban areas. Preliminary data suggest that, because of the high contagiousness of measles and migration of susceptible persons from rural areas, targeted urban campaigns have limited impact on transmission, especially during epidemics (World Health Organization Office for Eastern Africa, unpublished data, 1999).

At least four factors contributed to low coverage during SVAs in Lusaka. First, measles vaccine and injection equipment arrived late (1 day before the start of the second round of polio subnational immunization days). Second, donor funds for operational costs were delayed, resulting in insufficient funds for personnel and fewer vaccination posts. Third, health-care workers went on strike on one of the campaign days because of nonpayment of the full government allowances. Finally, supervision and monitoring were inadequate at the central and district levels.1

During the 11-month period following SVAs, six measles deaths (33% of the annual total) occurred among children who should have received measles vaccination during the campaign. The increase in the number of measles cases...
Among older persons in the latter two study periods may be the result of migration of susceptible persons into Lusaka or changes in use of health care facilities included in the study.

Improvements in the vaccination infrastructure in Zambia, a reversal of the declining trend in routine vaccination coverage, improvements in monitoring of coverage, high coverage (≥95%) in future SVAs that target a wider age group and geographic area, and strengthening of surveillance are needed to decrease measles-associated morbidity and mortality in Zambia. Advocacy and improved partner coordination are needed to further reduce measles morbidity and mortality.

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6 available

Influenza and Pneumococcal Vaccination Levels Among Persons Aged ≥65 Years—United States, 1999

MMWR. 2001;50:532-537
2 tables, 1 figure omitted

Annual influenza epidemics have resulted in an average of >18,000 deaths and 48,000 pneumonia and influenza hospitalizations among older persons in the United States.1 In 1998, an estimated 3,400 older persons died from bacterial pneumococcal pneumonia, a common complication of influenza, or from other forms of invasive pneumococcal disease.2 A 2000 national health objective included increasing influenza and pneumococcal vaccination levels to ≥60% among noninstitutionalized, high-risk persons, including those aged ≥65 years.3 To assess progress toward this objective, data were analyzed from the 1999 Behavioral Risk Factor Surveillance System (BRFSS) for persons aged ≥65 years. This report summarizes the results of that analysis, which indicated that prevalence of influenza vaccination during the 1998-99 influenza season exceeded the objective nationally and in 48 of 52 reporting areas; however, influenza vaccination levels may have reached a plateau. Prevalence among older persons who had ever received pneumococcal vaccination exceeded the national objective in only eight states. To reach the 2010 national objective of ≥90% influenza and pneumococcal vaccination among this population, new strategies and additional resources to implement adult vaccination activities may be needed.

BRFSS is an ongoing, state-based, random-digit-dialed telephone survey of noninstitutionalized civilian adults aged ≥18 years. Questions about having received an influenza vaccination (“During the past 12 months, have you had a flu shot?”) and pneumococcal vaccination (“Have you ever had a pneumonia vaccination?”) were asked in odd-numbered years starting in 1993. In 1999, 30,668 of 159,989 respondents reported they were aged ≥65 years. Respondents who reported an unknown influenza (2%) or pneumococcal (4%) vaccination status were excluded from analysis. Overall vaccination levels were estimated for the 50 states and the District of Columbia; data for Puerto Rico were reported in area-specific results only. Data were weighted by age, sex, and, in some states, by race/ethnicity, to reflect each area’s estimated adult population. SUDAAN was used to calculate point estimates and 95% confidence intervals (CI), and to conduct multivariate logistic regression to calculate odds ratios (OR) and test associations of vaccination status with age, race/ethnicity, sex, education level, length of time since last check-up, self-reported health, and diabetes status.

During 1999, 66.9% (95% CI=66.0%-67.8%) of respondents reported having received an influenza vaccination during the preceding year, compared with 65.5% (95% CI=64.6%-66.4%) in 1997.4 Estimated influenza vaccination levels exceeded 60% in 48 of 52 reporting areas; in 33 of 48, the lower limit of the 95% CI also exceeded 60%. In three of four areas with point estimates of influenza vaccination below 60%, the 95% CI included 60%. Estimated influenza vaccination levels increased in 31 areas from 1997 to 1999, compared with increases in 48 areas from 1995 to 1997. In the 52 reporting areas, the median percentage point difference from 1997 to 1999 was 1.6 (range: −5.0-9.0), compared with a median difference of 6.0 (range: −4.1-23.2) from 1995 to 1997.

The proportion of respondents reporting ever having received a pneumococcal vaccination increased from 45.4% (95% CI=44.4%-46.3%) in 1997 to 54.1% (95% CI=53.2%-55.1%) in 1999. Estimated prevalence of pneumococcal vaccination was ≥50% in 45 states and ≥60% in eight states. In one of the eight states with point estimates ≥60%, the lower 95% CI also exceeded 60%. In 16 of 44 areas with estimated prevalence <60%, the 95% CI included 60%. From 1997 to 1999, pneumococcal vaccination prevalence estimates increased in 49 areas (median percentage point difference among the 52 reporting areas: 8.4; range: −12.0-21.1).

Non-Hispanic black and Hispanic respondents were significantly less likely than non-Hispanic white respondents to report vaccination against influenza (blacks: OR=0.41; 95% CI=0.35-0.48, and Hispanics: OR=0.68; 95% CI=0.53-0.88) or pneumococcal disease (blacks: OR=0.44; 95% CI=0.37-0.53, and Hispanics: OR=0.43; 95% CI=0.34-0.56) based on the logistic regression analysis (p<0.05). These differences were not explained by variations in age, sex, education level, length of time since last check-up, self-reported health, or diabetes status. A significant change in vaccination coverage from 1997 to 1999 among racial/ethnic populations was an increase in pneumococcal vaccination among non-Hispanic whites.

Other factors independently associated with vaccination status based on the logistic regression analysis were age, education level, length of time since last check-up, and health status (p<0.05). Persons aged ≥75 years were more likely to report influenza or pneumococcal vaccination than persons aged 65-74 years.
Persons with diabetes were more likely to report vaccination, compared with those who did not have diabetes. Coverage increased as education level increased, self-reported health declined, and length of time since last check-up decreased.

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CDC Editorial Note: The findings in this report indicate that by 1999 coverage levels among persons aged ≥65 years approached or exceeded the 2000 national objective for influenza vaccination in all states and for pneumococcal vaccination in 24 states. Pneumococcal vaccination coverage increased linearly from 1993 to 1999; the rate of increase for influenza vaccination coverage was lower from 1997 to 1999 than from 1993 to 1997. Similar findings were observed in the 1993-1998 National Health Interview Surveys (NHIS), which monitors progress toward the national health objectives (also CDC, unpublished data, 2000). Self-reported influenza vaccination in the 1999 BRFSS mainly reflected vaccinations received for the 1998-99 influenza season. Vaccination coverage for subsequent seasons will be monitored using BRFSS and NHIS to determine whether influenza vaccination coverage for this population reached a plateau by the 1999-2000 season and the effect of delays in influenza vaccine supply during the 2000-01 season and projected for 2001-02. Preliminary NHIS estimates of influenza vaccination coverage among older adults were 66.6% for those interviewed during the first 6 months of 1999 and 68.1% for the first 6 months of 2000 (http://www.cdc.gov/nchs/ nhis.htm).

In addition to increasing influenza and pneumococcal vaccination to ≥90% among persons aged ≥65 years by 2010, another national health objective is to eliminate health disparities among diverse populations. Racial/ethnic disparities continued in vaccination levels from 1997 to 1999. Influenza vaccination levels were lower among persons with less than a high school education or aged 65-74 years than among persons with higher education levels or older age.

Pneumococcal vaccination coverage lagged behind influenza vaccination coverage and was <60% even among persons most likely to visit a healthcare provider (e.g., those reporting a check-up within the preceding 12 months, poor health, or diabetes). Health-care providers should use every opportunity to assess the vaccination status of patients and offer indicated vaccines. Annual influenza vaccination provides such an opportunity; influenza and pneumococcal vaccines can be administered concurrently at different sites without increasing side effects, and pneumococcal vaccine should be administered to patients who are uncertain about their vaccination history.

The findings in this report are subject to at least two limitations. First, vaccination status was self-reported and not validated; self-report of influenza vaccination may be more reliable than self-report of pneumococcal vaccination. In addition, recall of pneumococcal vaccination may be more accurate for persons aged 65-74 years than for those aged ≥75 years. Second, BRFSS excludes nursing-home residents and other institutionalized populations and households without telephones or with only cellular phones; however, vaccination coverage among older adults estimated from the 1997 NHIS increased only slightly when households without telephones were excluded (from 63.2% to 64.1% for influenza and from 42.4% to 43.0% for pneumococcal) (CDC, unpublished data, 2000).

Multiple factors underscore the need to assess local, state, and national adult vaccination programs, including a possible plateau in influenza vaccination levels among older adults, failure nationally and in most states to meet the 2000 objective for pneumococcal vaccination, racial/ethnic and socioeconomic disparities in vaccination coverage, delays in the distribution of the influenza vaccine reported during the 2000-01 season, and projected delays during 2001-02 (http://www.cdc.gov/flu/acipjune21.htm). To achieve and sustain ≥90% vaccination among these populations, public, private, and community partners must collaborate to improve vaccine use among older persons and to strengthen the influenza vaccine supply. When supply problems are anticipated, delivery of the first available vaccine should target older persons and others at high risk; for the 2001-02 season, providers should target vaccine available in September and October to these groups and to health-care workers. Physicians can improve coverage using strategies such as provider reminder/recall, assessment and feedback, and standing orders, however, methods are needed to identify and increase the number of health-care providers using these strategies. Even with such strategies, providers may be unable to achieve the 2010 objective among older patients during October-November, the optimal period for influenza vaccination. Providers should continue to vaccinate through December and as long as vaccine is available. Other interventions include increasing community demand for vaccinations using client reminder/recall and education campaigns, enhancing access to vaccination services by reducing out-of-pocket costs, and offering vaccination in community settings such as senior centers and drug stores.

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10 available