

addition. An independent study using only laboratory confirmation and ICD-9-CM—based ILI surveillance also found that PVP increased by adding measured body temperature.¹⁰ The large PVP increase with medical record confirmation was attributed to the low number of ESSENCE ILI cases with an elevated temperature at the clinic, potentially resulting from antipyretic use or actual afebrile infection. When compared with laboratory-confirmed respiratory infections, sensitivity decreased. However, with medical record confirmation, sensitivity stayed the same, because all the ILI cases still had an elevated temperature, per the medical record case definition, and an ILI ICD-9-CM code, per the ESSENCE case definition. Despite the improvement in PVP by adding a measured body temperature to the ESSENCE case definition, the potential loss in sensitivity might reduce the ability to detect actual ILI outbreaks. Users need to determine if this loss is acceptable for their purposes.

The findings in this report are subject to at least three limitations. First, as new data arrive in ESSENCE, the web page does not record the date additional case-patients appeared. Therefore, evaluators could only estimate when ESSENCE issued an alert to the ILI outbreak, based on historical documentation. Second, this evaluation collected data from only one outbreak at one USAF base. Additional outbreak analyses from other USAF bases are needed to judge the effectiveness of ESSENCE as an early-warning outbreak system for the USAF. Finally, the results of this evaluation are not generalizable to the other military services or civilian public health agencies, which might use ESSENCE differently.

This evaluation showed that, despite strengths in data quality, flexibility, and representativeness, ESSENCE did not serve as an early warning system for an emerging infectious disease during a localized, single-source outbreak, and did not detect the outbreak soon enough to allow prevention and control measures to be instituted. For enhanced out-

break detection and monitoring, more frequent Internet data transmissions would improve ESSENCE's timeliness. Additionally, the inclusion of measured body temperature in the ESSENCE ILI case definition could improve PVP, but with a possible loss in sensitivity resulting from exclusion of afebrile cases. As the strengths, weaknesses, and limitations of ILI surveillance as an early warning system for emerging infectious disease become better understood, future development should investigate how informatics and information technology can overcome ILI surveillance weaknesses.

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*The ESSENCE ICD-9-CM codes for ILI include the following: 079.99 viral infection, not otherwise specified; 382.9 otitis media, not otherwise specified; 460 acute nasopharyngitis; 461.9 acute sinusitis, not otherwise specified; 465.9 acute upper respiratory infection, not otherwise specified; 466.0 acute bronchitis; 486 pneumonia, organism not otherwise specified; 490 bronchitis, not otherwise specified; 780.6 fever; 780.60 fever, unspecified; 780.64 chills (without fever); 786.2 cough.

Trends in Tuberculosis—United States, 2010

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2 figures, 1 table omitted

IN 2010, A TOTAL OF 11,181 TUBERCULOSIS (TB) cases were reported in the United States, for a rate of 3.6 cases per 100,000 population, which was a decline of 3.9% from 2009 and the lowest rate recorded since national reporting began in 1953.¹ This report summarizes provisional 2010 data from the National TB Surveillance System and describes trends since 1993. Despite an average decline in TB rates of 3.8% per year during 2000-2008, a record decline of 11.4% in 2009,² and the 2010 decline of 3.9%, the national goal of TB elimination (defined as <0.1 case per 100,000 population) by 2010 was not met.³ Although TB cases and rates decreased among foreign-born and U.S.-born persons, foreign-born persons and racial/ethnic minorities were affected disproportionately by TB in the United States. In 2010, the TB rate among foreign-born persons in the United States was 11 times greater than among U.S.-born persons. TB rates among Hispanics, non-Hispanic blacks, and Asians were seven, eight, and 25 times greater, respectively, than among non-Hispanic whites. Among U.S.-born racial and ethnic groups, the greatest racial disparity in TB rates was for non-Hispanic blacks, whose rate was seven times greater than the rate for non-Hispanic whites. Progress toward TB elimination in the United States will re-

What is already known on the topic?

In 1989, the Strategic Plan for Elimination of Tuberculosis in the United States set a target date of 2010 to achieve its goal, defined as an annual tuberculosis (TB) case rate of <0.1 per 100,000 population.

What is added by this report?

For 2010, preliminary data show a national TB case rate of 3.6 per 100,000 population, a decrease of 3.9% from 2009, but the goal of eliminating TB in the United States by 2010 was not achieved, and foreign-born persons and racial/ethnic minorities continued to be affected disproportionately.

What are the implications for public health practice?

Ongoing surveillance and improved TB control and prevention activities, especially among disproportionately affected populations, are needed to eliminate TB in the United States.

quire ongoing surveillance and improved TB control and prevention activities to address persistent disparities between U.S.-born and foreign-born persons and between whites and minorities.

Health departments in the 50 states and the District of Columbia (DC) electronically report to CDC verified TB cases that meet the CDC and Council of State and Territorial Epidemiologists case definition.* Reports include the patient's self-identified race, ethnicity (i.e., Hispanic or non-Hispanic), treatment information, and, whenever available, drug-susceptibility test results. CDC calculates national and state TB rates overall and by racial/ethnic group using U.S. Census population estimates, with the national rate and percentage change from 2009 to 2010 based on U.S. Census annual estimates.^{4,5} The Current Population Survey provides the population denominators used to calculate TB rate and percentage changes according to national origin (U.S.-born versus

foreign-born).⁶ For TB surveillance, a U.S.-born person is defined as someone born in the United States or its associated jurisdictions, or someone born in a foreign country but having at least one U.S.-born parent; all other persons are considered foreign-born. For 2010, patients with unknown country of birth represented 0.9% (96 of 11,181) of total cases. For this report, persons of Hispanic ethnicity might be of any race; non-Hispanic persons are categorized as black, Asian, white, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, or of multiple races.

In 2010, a total of 11,181 tuberculosis (TB) cases were reported in the United States, equivalent to 3.6 cases per 100,000 population. TB rates in reporting areas ranged from 0.6 (Maine) to 8.8 (Hawaii) cases per 100,000 population (median: 2.5). Thirty-two states had lower rates in 2010 than in 2009; 18 states and DC had higher rates. Four states (California, Texas, New York, and Florida) each reported more than 500 cases for 2010. Combined, these four states accounted for 5,503 TB cases, or nearly half (49.2%) of all TB cases in 2010.

Among U.S.-born persons, the number and rate of TB cases declined in 2010. The 4,378 TB cases in U.S.-born persons (39.5% of all cases in persons with known national origin) were a 3.7% decrease compared with 2009, and a 74.9% decrease compared with 1993. The 1.6 cases per 100,000 population TB rate among U.S.-born persons represented a 4.6% decrease since 2009 and a 77.8% decrease since 1993.

Among foreign-born persons in the United States, the number and rate of TB cases declined in 2010. A total of 6,707 TB cases were reported among foreign-born persons (60.5% of all cases in persons with known national origin), a 3.4% decrease from 2009. The 18.1 per 100,000 population TB rate among foreign-born persons was a 4.3% decrease since 2009 and a 46.8% decrease since 1993. In 2010, four countries accounted for 50.3% of TB cases associated with foreign birth: Mexico

(1,539 [23.0%]), the Philippines (738 [11.0%]), India (577 [8.6%]), and Vietnam (518 [7.7%]).

In 2010, more TB cases were reported among Hispanics than any other racial/ethnic group in the United States. Asians had the highest TB case rate. From 2009 to 2010, TB rates decreased most for blacks, then Hispanics, Asians, and whites. Despite these declines, TB rates among Hispanics, blacks, and Asians were seven, eight, and 25 times greater, respectively, than among whites. Among persons with TB, approximately 95% of Asians, 75% of Hispanics, 34% of blacks, and 20% of whites were foreign-born. Among U.S.-born persons, blacks (40.0% [1,751 of 4,378]) were the racial/ethnic group with the greatest number of TB cases and the largest disparity with U.S.-born whites; the TB rate among U.S.-born blacks was seven times greater than among U.S.-born whites.

In 2010, among persons with TB who also had a known human immunodeficiency virus (HIV) test result, 8.6% (611 of 7,090) were coinfecting with HIV. California and Vermont data were not available for these calculations.[†]

A total of 113 cases of multidrug-resistant TB (MDR TB)[‡] were reported in 2009, the most recent year for which complete drug-susceptibility data are available. Drug-susceptibility test results for isoniazid and rifampin were reported for 97.7% (9,810 of 10,039) and 96.9% (8,573 of 8,851) of culture-confirmed TB cases in 2008 and 2009, respectively. Among these cases, the percentage for 2009 that were MDR TB (1.3% [113 of 8,573]) was similar to the percentage for 2008 (1.1% [105 of 9,810]). The percentage of MDR TB cases among persons without a previous history of TB has remained stable at approximately 1.0% since 1997; for persons with a previous history of TB, the percentage with MDR TB is approximately five times greater. In 2009, foreign-born persons accounted for 101 (89.4%) of the 113 MDR TB cases. To date, one case of extensively drug-resistant TB (XDR TB)[§] has been reported in 2010.

The recommended length of drug therapy for most types of TB is 6-9 months. In 2007, the latest year for which end-of-treatment data are complete, 84.5% of patients for whom ≤ 1 year of treatment was indicated completed therapy within 1 year, compared with 83.9% in 2006. Ultimately, 93.6% of those patients who began treatment in 2007 completed treatment, compared with 93.0% in 2006.

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CDC Editorial Note: In 1989, the Advisory Council for the Elimination of Tuberculosis, in partnership with the CDC's Division of Tuberculosis Elimination, set a strategic goal for the elimination of TB, defined as a TB case rate of < 0.1 per 100,000 population, by 2010.³ The goal of TB elimination remains unmet. The impact of the HIV/AIDS epidemic, which in the United States fueled the TB resurgence of the early 1990s,⁷ was underestimated when the TB elimination goal was set in 1989, as was the continued effect of the worldwide increase on TB rates among foreign-born persons in the United States.

Although the United States has yet to achieve TB elimination, substantial and consistent gains in the reduction of TB incidence have been realized. TB incidence has decreased by 65.2% since the peak of the resurgence experienced between 1985 and 1992.⁷ Furthermore, the record 11.4% decrease in the reported TB rate in 2009 raised the possibility of a more accelerated downward trend.² However, 2010 provisional surveillance demonstrates a less substantial TB rate decline of 3.9%, a level similar to the average rate of decline of 3.8% during 2000-2008. Supporting the hypothesis that the large and unprecedented decline in 2009 was an aberration resulting partly from changing migration patterns, the decline in the TB case rate among foreign-born persons was more pronounced than usual that year.² Other factors, such as improved TB control and changes in

health-care access and use, also might have played a role.

During 1993-2008, the number of TB cases among foreign-born persons remained stable (approximately 7,000-8,000 cases annually), while the number among U.S.-born persons declined steadily.¹ As a result of these differing trends, the gap in TB rates between U.S.-born and foreign-born populations has grown. Consistent with 2009 findings, national TB surveillance in 2010 reported fewer TB cases among foreign-born persons than during 1993-2008. Even with the decline in cases among foreign-born persons, the TB case rate among foreign-born persons in 2010 was 11 times greater than among U.S.-born persons. Disparities along ethnic and racial lines also remained notable.

The findings in this report are subject to at least two limitations. First, the analysis was based on provisional 2010 data. Additionally, TB case counts and HIV data were incomplete at the time of this report. Second, population denominator data are drawn from multiple U.S. Census sources, and estimates are subject to periodic adjustment. CDC's annual TB surveillance summary,¹ scheduled for publication in fall 2011, will provide final 2010 surveillance data.

TB elimination in the United States was not achieved by 2010, the target for the nation set in 1989. Continued progress in meeting the goal of TB elimination will hinge on improving TB control and prevention activities among disproportionately affected populations, including foreign-born persons, blacks, and Hispanics. Better diagnostic tests and screening strategies for persons with latent TB infection, shorter treatment regimens, a new and effective vaccine, and improvements in global TB control also are needed. Ongoing surveillance activities will be paramount in identifying any changes in trends, which in turn should affect TB control strategies. CDC will work with the Advisory Council for the Elimination of Tuberculosis, the National TB Controllers Association, state and local health departments, and other part-

ners to set new, realistic target dates for TB elimination that take into account factors likely to affect the future burden of TB in the United States.

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†Vermont no longer reports HIV status of TB cases to CDC, and California has not reported since 2004.

‡Defined by the World Health Organization (WHO) as a case of TB in a person with a *Mycobacterium tuberculosis* isolate resistant to at least isoniazid and rifampin. Available at http://www.who.int/tb/publications/2008/drs_report4_26feb08.pdf.

§Defined by WHO as a case of TB in a person with an *M. tuberculosis* isolate with resistance to at least isoniazid and rifampin among first-line anti-TB drugs, resistance to any fluoroquinolone (e.g., ciprofloxacin or ofloxacin), and resistance to at least one second-line injectable drug (e.g., amikacin, capreomycin, or kanamycin). Available at http://www.who.int/tb/publications/2008/drs_report4_26feb08.pdf.

Notes From the Field: Poliomyelitis Outbreak—Republic of the Congo, September 2010– February 2011

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ON NOVEMBER 4, 2010, A CASE OF WILD poliovirus type 1 (WPV1) was confirmed in a resident of the port city, Pointe Noire, the first WPV case in Republic of the Congo (ROC) in 10 years. The WPV1 isolate from this resident was genetically most closely related to WPV1 isolated in Angola in 2010. Subsequent investigation, including active case finding, revealed increased acute flaccid paralysis (AFP) hospital admissions beginning in September. Weekly admissions rose from approximately 10 AFP patients in early October to approximately 80 by the end of October and November. With response immunization activities, weekly AFP admissions fell to fewer than five by the end of December. A provisional total of 554 AFP cases were identified nationally, with paralysis onset from