

# Cases of extensively drug-resistant TB declining each year in the US, but new cases still

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A new report suggests that the number of cases of extensively drug-resistant tuberculosis (XDR-TB) in the U.S. has declined in the past fifteen years, but new cases continue to be reported, according to the study published in the November 12 issue of *JAMA*. The researchers note the decrease in the number of XDR-TB cases coincides with improved TB and HIV/AIDS control.

"Tuberculosis remains the leading cause of infectious disease death among adults worldwide," the authors provide as background information. "In recent years, drug-resistant TB has emerged as an expanding threat, with an estimated 489,000 new cases in 2006. Treatment of multidrug-resistant TB (MDR-TB) is more than 100 times as costly as treatment of drug-susceptible TB, requiring intensive case management for its prolonged (18-24 months) and more toxic treatment course." Treatment success rates are lower for patients with MDR-TB as compared to those with drug-susceptible TB. In 2005, a new category of TB disease was defined -- extensively drug-resistant TB (XDR-TB) -- because TB cases with even great drug resistance had emerged, especially in settings of high human immunodeficiency virus (HIV) prevalence throughout the world.

J. Peter Cegielski, M.D., M.P.H., from the Centers for Disease Control and Prevention, Atlanta, and colleagues, analyzed 15 years of national surveillance data to describe the epidemiology of XDR-TB in the U.S.

and to identify its unique characteristics as compared to MDR-TB and drug-susceptible TB cases. The analysis was based on all culture-confirmed cases of TB reported by the 50 states and the District of Columbia from 1993 through 2007. XDR-TB was defined as resistance to isoniazid, a rifamycin, a fluoroquinolone, and at least one of amikacin, kanamycin, or capreomycin based on drug susceptibility test results from initial and follow-up specimens.

"A total of 83 cases of XDR-TB were reported in the United States from 1993 to 2007," the authors report. "The number of XDR-TB cases declined from 18 (0.07 percent of 25,107 TB cases) in 1993 to 2 (0.02 percent of 13,293 TB cases) in 2007 ..." The authors note that of the "40 XDR-TB cases reported during 1993 – 1997, 25 (62 percent) were known to be HIV-infected. During 1998 – 2007, only 6 (14 percent) of 43 XDR-TB cases were known to be HIV-infected." Of the 83 XDR-TB cases, the majority were between the ages of 25 to 44 years, 64 percent male, U.S.-born, and unemployed (53 percent). Forty-percent (33 patients) were Hispanic and three cases (4 percent) occurred among health care workers. Patients with XDR-TB were more likely to be Hispanic and correctional facility residents compared with drug-susceptible TB cases.

"Twenty-six XDR-TB cases (35 percent) died during treatment, of whom 21 (81 percent) were known to be HIV-infected. ... Death rates were nearly two times greater than among MDR-TB cases and more than six-times greater than among drug-susceptible TB cases. Infection with HIV played an important role in both the occurrence and outcomes of XDR-TB cases," the authors state.

"Preventing the further emergence of drug resistance is paramount and must include not only TB program strengthening to ensure that patients complete their treatment regimen but also general health system interventions to improve infection control. Greater vigilance regarding

drug resistance must include systematic second-line drug susceptibility testing according to published guidelines. Lessons gained from MDR-TB in the 1990s should be applied: Patients must be identified early, treated effectively, and assisted to complete treatment, and infection control precautions must be in place to prevent further emergence and transmission of XDR-TB," the authors conclude.

Source: JAMA and Archives Journals

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