



THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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2005 Health Alert #45: Cluster of Strain W multidrug resistant tuberculosis among homeless HIV-infected individuals

- From April through August 2005, four cases of multidrug resistant (MDR) tuberculosis (TB), were diagnosed in residents of a facility for homeless, substance abusing HIV-infected individuals in the Bronx; all four cases had the identical strain of TB (Strain W genotype) resistant to isoniazid, rifampin, ethambutol, streptomycin, pyrazinamide and kanamycin.
- Recently, a fifth case of MDR TB with the Strain W genotype has been diagnosed in a former resident of the facility at a hospital in New Jersey; this case is also resistant to ofloxacin and likely all quinolones; resistance was most likely acquired when the patient was treated with a quinolone for presumed bronchitis during his infectious period
- Many HIV-infected homeless contacts to this cluster remain in the community and have not been located
- All HIV-infected individuals presenting with a cough should be carefully evaluated for active TB and should be isolated until active TB is excluded. All suspected and confirmed cases of TB should be reported within 24 hours to the Bureau of Tuberculosis Control by telephone to the TB Hotline, (212) 788-4162 and faxing a Universal Reporting Form to 212-788-4179.

Please distribute to staff in the Departments of Emergency Medicine, Infectious Disease, Ambulatory Medicine, Infection Control, Internal Medicine, Family Medicine, Laboratory Medicine (Microbiology).

Dear Colleagues,

We are writing to alert you to a cluster of multidrug resistant (MDR) tuberculosis (TB) among persons who spent time at a facility for homeless, substance abusing HIV-infected individuals in the Bronx. We ask that you be alert for any additional cases by evaluating any HIV-infected individuals presenting with cough for active TB, and notifying us immediately regarding any suspect cases.

Background on Outbreak:

On April 12, 2005, a 53 year old, HIV-infected male presented with cough, fever, weight loss and night sweats and was found to have acid fast bacilli (AFB) sputum smear positive (4+) cavitory pulmonary TB. He worsened clinically and died on April 16. Subsequently, his isolate was found to be resistant to isoniazid, rifampin, ethambutol, streptomycin, pyrazinamide and kanamycin and matched the Strain W genotype, the MDR TB strain that was associated with several nosocomial outbreaks of TB in the late 1980s and early 1990s in New York City. During his infectious period, Case 1 resided at a harm-reduction facility in the Bronx primarily for

homeless, HIV-infected substance abusing individuals. A contact investigation was initiated at this facility.

Two additional cases with the Strain W genotype were identified at the facility in June and July. Case 2, a 36 year old HIV-infected male, was hospitalized June 5 with hemoptysis, weight loss and night sweats and was found to have AFB smear positive (1+), culture positive, non-cavitary, pulmonary TB. Case 3, a 37 year old HIV infected male, was hospitalized on July 5 with productive cough, fever and weight loss and was found to have AFB smear positive (4+) non-cavitary, pulmonary TB. Case 2 remains on appropriate therapy, and Case 3 died of sepsis on September 23, despite initiation of appropriate TB therapy.

Active case finding was conducted at the facility in July. All residents and staff of the facility were screened with TST, CXR, sputum induction, and medical evaluation. Once active TB was excluded, treatment for presumed latent TB infection (LTBI) with moxifloxacin was recommended for HIV-infected contacts and for HIV-negative contacts with new positive TST results or prior positive results and intense exposure. Discharged residents were actively sought by a dedicated staff of three public health advisors who conducted home visits to last known address as well as searches in the prison system and homeless registries.

One hundred ten contacts were identified at the facility; of these, 33/34 (97%) of current residents, 17/49 (35%) of discharged residents and 26/27 (96%) of staff completed evaluation with at least CXR and sputum induction. For those discharged residents not located, a letter was sent to the last known medical providers apprising them of the exposure and requesting assistance in locating these contacts. Twenty-five HIV-infected and three HIV-negative persons began treatment with moxifloxacin for presumed LTBI. One additional resident, a 47 year old HIV infected male, was diagnosed with AFB smear negative, culture positive TB, also Strain W (Case 4) as a result of the active case finding effort.

On November 28, DOHMH was contacted by the New Jersey TB Program regarding a case of MDR TB with the Strain W genotype. Upon review, it was found that this individual (Case 5) was one of the discharged residents who had not been located in New York City during the investigation. According to NJ TB Program, from June through September 2005, Case 5 presented to emergency departments in New Jersey on several occasions complaining of cough and fever and was repeatedly diagnosed with bacterial pneumonia or bronchitis. In June, he was treated with a seven day course of gatifloxacin. In September he presented with cough, hemoptysis and fever and a left lower lobe infiltrate on CXR and was found to have AFB smear positive (4+), culture positive MDR TB, with Strain W genotype. Case 5 has the same resistance profile as previous cases but is also resistant to ofloxacin and likely all quinolones, making his disease much more challenging to treat. Resistance was probably acquired when patient was treated with gatifloxacin prior to his TB diagnosis. In addition to the facility where the outbreak occurred, Case 5 is believed to have stayed in at least one single room occupancy hotel in New York City, as well as a homeless shelter in New Jersey during his infectious period.

Surveillance for additional MDR-TB cases among homeless persons with HIV:

The NYC DOHMH is collaborating with New Jersey TB Program and New York State Bureau of TB Control in this ongoing investigation. We would also like to urge medical providers to

- Isolate all HIV infected individuals who present with cough and fever until active TB disease has been excluded, particularly those patients with a history of homelessness and/or substance abuse, and obtain clinical specimens for AFB smear and culture
- Report all patients suspected and confirmed with tuberculosis (TB) to the New York City Department of Health and Mental Hygiene (DOHMH), Bureau of Tuberculosis Control, within 24 hours of the time the diagnosis is first suspected. The TB reporting requirements are listed in the DOHMH website.
www.nyc.gov/html/doh/html/tb/tb1f.shtml Suspected and confirmed TB patients may be reported by telephone to the TB Hotline, (212) 788-4162, but a completed Universal Reporting Form (URF) must follow within 48 hours. The URF should be faxed to the Bureau of Tuberculosis Control at (212) 788-4179 and the original mailed to DOHMH at 125 Worth Street, Room 315, CN-6, NY, NY 10013. The URF can also be completed online, by first creating an account on NYC-MED at www.nyc.gov/health/nycmed.
- Suspect drug resistance if patients are not getting better on standard first line treatment for TB (ie. Isoniazid, rifampin, pyrazinamide, ethambutol) within two weeks of start of TB treatment
- Clinical specimens from respiratory sources in individuals with high clinical suspicion of TB should be sent to the Public Health Laboratory or the New York State laboratory, Wadsworth Center for nuclei acid amplification (NAA) analysis (rapid diagnostic test). This test has high sensitivity and specificity when clinical suspicion of TB is high and allow confirmation of TB diagnosis within a few days
- Send specimens for DNA analysis to the Public Health Laboratory Services at 455 First Avenue, Room 136, New York, NY 10016 (as required by the New York City Health Code)
- Contact us if drug resistance is suspected. The Public Health Laboratories also perform free susceptibility testing, if needed.

As always, we appreciate our ongoing relationship with the medical and laboratory communities in NYC to help us monitor emerging infectious disease trends of public health importance.

Sincerely

Sonal Munsiff

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Assistant Commissioner
Bureau of TB Control