

# The TB Challenge

## “Partnering to Eliminate TB in African Americans”

A Newsletter from the Division of Tuberculosis Elimination, Field Services and Evaluation Branch

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### TB in African Americans: Data from the 2003 Surveillance Report

Michael Fraser, Public Health Advisor, DTBE/FSEB



Lori Armstrong, Ph.D., Epidemiologist, Surveillance, Epidemiology, and Outbreak Investigations Branch

**Michael Fraser:** What are the current tuberculosis (TB) case counts and rates for non-Hispanic blacks?

**Lori Armstrong:** According to the DTBE's national tuberculosis surveillance system 2004 provisional data, there were 4,006 cases of TB in non-Hispanic blacks and a rate of 11.1 per 100,000. There were 4,153 cases of TB in non-Hispanic blacks in 2003 and a rate of 11.7 per 100,000. This represents a 4.6% decline in the rate for non-Hispanic blacks from 2003 to 2004.

**MF:** Looking at the period 1993 to 2003, please discuss some of the trends in this population. In addition, what is the age and gender distribution of these cases?

**LA:** Over the period 1993 to 2003, TB rates in non-Hispanic blacks have fallen steadily (29.1/100,000 in 1993 to 11.7/100,000 in 2003). This is a 60% decline in the case rate. The percent decline in case rates for all TB cases during that time was only 48% (9.8/100,000 in 1993 to 5.1/100,000 in 2003). Although non-Hispanic blacks still had TB at a rate that was more than 2 times the national case rate in 2003, the rate has declined tremendously over the past decade.

In 2003, there were more TB cases in male non-Hispanic blacks (n=2531) than in females (n=1614) and, as one might expect, the rates for males were much higher (males 14.9/100,000, females 8.7/100,000). This is the same pattern we see for every other racial/ethnic group in the United States. The rate of TB also rises with age for all racial/ethnic groups, including non-Hispanic blacks. The older the age group, the higher the rate. As in other racial/ethnic groups, non-Hispanic blacks have their highest rate of TB among those over age 65 years (21.3/100,000).

**MF:** Do these data speak to why more non-Hispanic black men are at a higher risk for developing TB than women? Why blacks in general versus whites are at a higher risk?

**LA:** Black non-Hispanic men are more likely than black non-Hispanic women to have risk factors that put them at greater risk for exposure for TB, thus at a greater risk for TB disease. In 2003, black non-Hispanic men with TB were 3.5 times more likely than black non-Hispanic women with TB to be homeless, 3 times more likely to have used excess alcohol within the past year, and nearly 4 times more likely to live in a correctional facility at the time of diagnosis. Homelessness is a major concern among non-Hispanic black TB patients. Among all TB patients who were reported in 2003 as being homeless within the past year, 362 patients (about 40%) were non-Hispanic black, versus 28% who were white.

**MF:** For comparing with other populations, do CDC data or any projects or studies in your branch indicate that non-Hispanic blacks are more likely to have resided in a correctional facility or homeless shelter or that this group is less educated, and/or more impoverished?

**LA:** Homeless status within the past year is collected by the national surveillance system, but we don't collect information on whether the person resided in a homeless shelter. There are several efforts within DTBE to study socioeconomic factors that may contribute to TB disease, such as educational level or income level. We don't collect these data in the national TB surveillance system, but geographically-based socioeconomic factors can be studied by linking the national surveillance data with U.S. Census data. These studies examine the SES factors that are collected by the Census Bureau and are based on where the person lives, such as the zip code, census tract or block group.

**MF:** Is CDC collaborating with other governmental and nongovernmental agencies to address this population that has been described as eight times more likely than non-Hispanic whites to develop TB disease?

**LA:** To address the high rate of TB in blacks in the United States, CDC has funded three demonstration projects in Chicago, Georgia, and South Carolina in collaboration with state and local health departments to identify innovative strategies for decreasing TB rates in African-American communities by improving TB diagnosis, screening, and treatment adherence in high-risk African-American communities. CDC is also conducting a formative research and intervention study in collaboration with the Research Triangle Institute; this study will 1) examine barriers to health-seeking

behaviors and treatment adherence for blacks with or at risk for TB, 2) determine barriers to TB guideline adherence among providers who serve this population, 3) develop and test interventions to overcome identified barriers, and 4) improve partnerships and collaborations among TB programs, providers, and organizations serving this population. Ms. Gail Burns-Grant and Dr. Nick DeLuca, DTBE, serve as the project officers for these initiatives, respectively. Alongside state and local health departments, CDC is working to ensure that adequate local resources are in place in communities with the greatest burden of TB.

**MF:** What was the completion of therapy rate in this group for 2003?

**LA:** States have up to 2 years after the diagnosis year to report completion of therapy on TB cases. Therefore, the most recent year that data are available is 2001. That year, 81% of non-Hispanic blacks with TB completed therapy within 1 year of treatment (among those where 1 year of therapy or less was medically indicated). This is comparable to 80.5% completion of treatment for all reported TB cases in the nation that year (among those cases where 1 year of therapy or less is medically indicated and who received treatment). The percentage of non-Hispanic blacks who receive directly-observed therapy is also very high: 83% in 2001, compared to 77% among non-Hispanic whites and 77% for all cases receiving treatment in 2001.

**MF:** Can you explain the national estimated HIV coinfection rates for non-Hispanic blacks and discuss what age groups are most impacted?

**LA:** In a DTBE study published last year, non-Hispanic blacks with TB reported in Southeastern states from 1991 to 2002 were more likely than whites to have certain risk factors, such as HIV infection, incarceration, or excess alcohol or drug use. This suggests that differences in socioeconomic health status and opportunity for TB exposure underlie increased risk for TB. For the most recent 5 years of available data, 1999 to 2003, 58% to 65% of all HIV-infected TB patients were non-Hispanic blacks, the highest percentage of any other racial/ethnic group. Among all non-Hispanic black TB patients, 18% to 19% were HIV-infected throughout that time period and most cases (29% to 33%) occurred among the 25- to 44-year age group. We can reduce TB in non-Hispanic blacks by continuing to work closely and collaboratively with our partners.

**MF:** Thank you.

## Lessons Learned in a Mid-Western African-American Community with Low TB Incidence and Program Resources

Dawn Tuckey, Program Consultant, DTBE/FSEB



Dawn Tuckey,  
MPH

From 2001 through 2004, a low-incidence state experienced an increase in the number of tuberculosis (TB) cases. In March 2004, the state department of health invited staff of CDC, the Division of Tuberculosis Elimination, to assist the state and local health officials in an epidemiologic investigation to prevent further spread of *M. tuberculosis*.

As a result of the investigation, a total of 26 TB cases were determined to be outbreak related. Only cases that had a matching genotype of *M. tuberculosis* or, when no isolate was available for genotyping, an epidemiologic link to a previously identified case were included as outbreak-related cases in the investigation.

During 2004, the county reported a total of 22 confirmed cases of TB. The case rate (6.5 per 100,000) was more than three times the TB rate of the entire state (2.1 per 100,000). Current data indicate that 1,090 contacts to outbreak-related cases were identified. Of the 26 outbreak-related cases, 10 (40%) had delayed diagnosis. The median age was 27 years (range: 6 months—51 years), 25 (96%) were African American, and 15 (58%) were female.

CDC staff determined that several factors contributed to this outbreak. One factor was nonadherence to latent TB infection (LTBI) treatment among the contacts. If four nonadherent contacts had completed the LTBI treatment regimen, their own disease plus 16 additional cases may have been prevented. A second contributing factor was delayed diagnosis. This was caused by health care providers, as well as the patient's own delay in accessing health care. For example, health care providers in low-incidence areas may have a low index of suspicion for TB. Patients, on the other hand, may delay seeking medical care or may not disclose TB exposure to health care providers. The delayed TB diagnosis in this outbreak emphasizes the importance of educating both health care providers and patients about TB. Thirdly, the need to expand contact investigations was a critical factor in this outbreak.

Prior to CDC's involvement, the contact investigation had two limitations. Even though 43% of the close contacts had a positive skin test result, the initial contact investigation was not expanded beyond close friends and family to include contacts at work and other social settings. The second limitation was the lack of staff to manage the TB patients and contacts; this occurs many times in low-incidence areas where resources are limited.

Thus, the lessons learned from this outbreak are as follows: (1) ensure completion of testing and treatment of contacts, (2) treat persons with LTBI and TB disease using directly observed therapy to ensure adherence, and (3) provide TB education to health care providers and the community.

This investigation also illustrates what can happen in a low-incidence area with limited TB resources, which is not uncommon in the United States. Therefore, this outbreak provides lessons for TB control by emphasizing the continued threat of TB in the United States, the importance of successful execution of TB control measures, and the need for resources to achieve prompt public health responses.

## Alabama's Three-Part Strategy to "Put TB on the Run" in the African-American Community

J. Scott Jones, Senior Public Health Advisor, State of Alabama, Department of Public Health

When the discussion of health disparities between African Americans and white persons in Alabama comes around to her end of the table, Nancy Keenon leans forward to emphasize her point. "We have a plan, and that plan is working." Keenon is the Director of Alabama's Division of Tuberculosis (TB) Control. Her division has two primary responsibilities: tracking TB and treating it.

The control of TB, which was once the leading cause of death in the state of Alabama, is a core public health function. A committed group of physicians, laboratorians, nurses, and field staff (also known as disease intervention specialists [DIS]) have made the control of TB in Alabama a reality. To illustrate her point, Keenon states that Alabama counted more than 2,600 persons with TB in 1951. This number contrasts with the 211 cases of TB reported in 2004. Keenon credits the work of those who provided leadership throughout the division over the years and the dedicated field staff. However, she knows that the work isn't over yet. "TB is retreating, but the battle is far from over," she warns.

Although blacks make up about 25% of the total population in Alabama, nearly 53% of all reported TB cases between 1999 and 2003 were found in this population. In 2003 alone, 78% of TB cases reported among children less than 15 years of age were in non-Hispanic blacks. The clearest measure of this disparity is the case rate for TB: the 5-year average for case rates among blacks is 12.7 per 100,000 population when compared to the 3.5 per 100,000 population among whites. Or, stated another way, for every 13 blacks in the state diagnosed with TB, there are fewer than 4 whites with the disease.

A review and analysis of TB morbidity conducted by Keenon and her staff has led to the development of a three-part plan at the state level to reduce the burden of TB in the African-American community. The Division has discovered a common factor when investigating reports of active TB disease among African-American children. This factor, "diagnostic delay," has been observed in three separate areas across the state. The

first part of the Division's strategy will be to expand training opportunities for health care providers serving this high-risk community. Reducing diagnostic delays is critical to the interruption of transmission and the prevention of secondary cases (often found in young children).

In 2005, the Division will develop and test targeted provider training. Beginning in 2006, the Division will conduct at least one targeted-provider training in each major metropolitan area of the state. The three-part plan is listed below:

1. Prompt diagnosis facilitates earlier initiation of treatment and contact investigations. In the second part of this strategy, the Division's DIS will improve how they find, evaluate, and bring to treatment persons in the community who have been exposed to, and infected with, *M. tuberculosis*. Contact investigation and treatment of latent infection (LTBI) can prevent secondary cases of TB disease.

2. Renewed commitment to the African-American community includes partnerships with the Alabama Minority Health Section and with others who have traditionally served this community. These partnerships are necessary to prepare the Division's field staff for the challenge of operating across cultural and economic barriers. Enhanced training for cultural competency already has been initiated and will be required for all TB field staff upon hiring. Existing TB staff will be required to attend this training as part of the state's annual training plan.

3. The third part of the Division's strategy requires recognition of a disturbing fact: African Americans are disproportionately represented in the state's correctional or penal system. The rate of incarceration among African Americans is greater than 2 to 1 when measured against all other groups in the system. The Division currently assists in the evaluation and investigation of persons with active TB disease in the state's prison system, and has identified opportunities for treating LTBI and preventing cases of TB disease in homes and communities after an inmate's release.

The Division's DIS will visit each prison and review charts monthly after the completion of each case or contact investigation. These monthly visits are currently expected of the DIS, as is the requirement that staff remain engaged with wardens to ensure inmates with latent infection complete therapy.

"Our goal is to gradually reduce the burden of disease over the next 5 years; we know this plan will work, and there may be ways to accelerate the decline." Keenon is not looking for a magic bullet; she knows that TB will be difficult to eliminate. "It will require us to communicate the advantages of preventive therapy more clearly, and this will require more than words." Keenon adds, "Once the community sees and believes in the actions of our staff, and once we have earned the trust of the community--then we will have TB on the run."



Nancy Keenon, MPH  
Director, Alabama Division of TB Control

For more information on Alabama's TB program strategies, please contact Ms. Keenon or a member of her staff at (334) 206-5330.

### CONTACT US ...

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