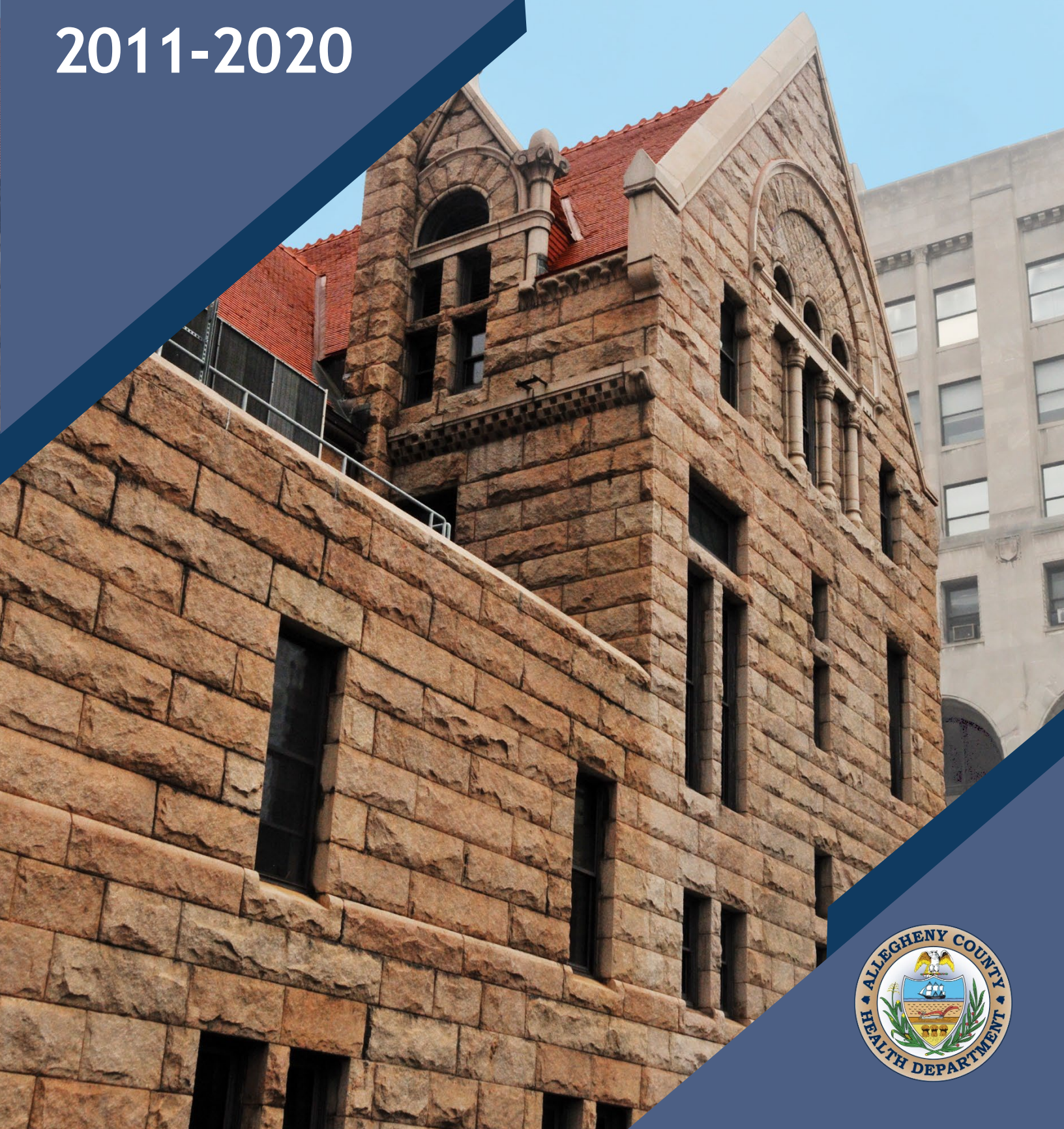


ALLEGHENY COUNTY
HEALTH DEPARTMENT

TUBERCULOSIS SURVEILLANCE

2011-2020



TUBERCULOSIS SURVEILLANCE IN ALLEGHENY COUNTY, 2011-2020

Tuberculosis (TB) is a highly contagious bacterial respiratory disease that mainly affects the lungs. Early infection, known as latent TB infection (LTBI), is not contagious and is asymptomatic. LTBI can develop into an active TB infection, which causes disease when the immune system cannot prevent TB bacteria from growing in the body.

Symptoms of active TB include a persistent cough lasting more than three weeks, cough with blood in sputum, or pain in the chest. Individuals suspected of having an active infection should undergo a medical evaluation that includes a medical history, physical examination, a test for TB, a chest radiograph, and a sputum sample.[1] TB may be diagnosed with a TB skin test or a TB blood test; positive tests only indicate that the person has been infected with the bacteria and do not tell whether the individual has LTBI or an active infection. A chest x-ray may suggest an individual has an active TB infection, but a sputum smear or laboratory culture is needed to confirm diagnosis of an active infection.[1]

Below are frequently asked questions regarding TB, along with a summary of cases reported to the Allegheny County Health Department (ACHD).

How is TB transmitted?

TB bacteria are spread from person-to-person through airborne droplets when an individual with an active TB infection coughs, sneezes, speaks, or sings.[1] Nearby individuals may breathe in these bacteria and become infected. The bacteria can settle in the lungs and move through the blood to infect other parts of the body. Only infections in the throat or lungs are likely to be spread to other individuals.

How is active TB prevented?

Infection prevention and control measures are critical in settings where the risk of TB transmission is high, such as healthcare facilities, congregate settings, and households with an individual who has an active infection. In healthcare settings, healthcare workers interacting with someone known or suspected to have an active TB infection should wear a filtering facepiece respirator, while TB-infected individuals should wear a surgical mask.[2] In households, persons with TB should cover their coughs and sneezes, avoid close contact, avoid sleeping in the same room with someone, and refrain from having visitors in the house while infectious. [3]

Individuals with LTBI may prevent progression to active TB disease by consulting their health care provider and getting treatment. Certain individuals with a latent TB infection, such as people with an HIV infection, elderly people or young children, people who inject drugs, and people with a weakened

immune system, are at higher risk of developing active TB disease and should take medicine to prevent the development of active TB disease. There are several treatments for LTBI including a four-month regimen of daily rifampin, a three-month regimen of once weekly isoniazid and rifapentine, and a six to nine-month regimen of daily isoniazid. The various combinations of drug regimens are to combat challenges of antibiotic resistant TB.

How is TB monitored?

In Allegheny County, healthcare providers and healthcare facilities must report active TB within 24 hours of identifying a case. Case reports submitted to ACHD are used to track cases and clusters of disease in time and location and to identify and monitor the incidence of TB acquired in healthcare facilities and in the community. LTBI is not a reportable condition; therefore, ACHD reports on TB are an undercount.

The Health Department's Pulmonary Center provides screening (Mantoux tuberculin skin testing or QuantiFERON-TB blood test when indicated), evaluation, treatment for TB patients, and directly observed therapy for those with active TB disease.

How is active TB treated?

Active TB disease is treated with multiple drug combinations, usually for 6 to 9 months. The first-line drugs are isoniazid (INH), rifampin (RIF), ethambutol (EMB), and pyrazinamide (PZA). It is very important that people who have TB disease finish the entire course of medicine and take the drugs exactly as prescribed so that drug resistance does not develop.

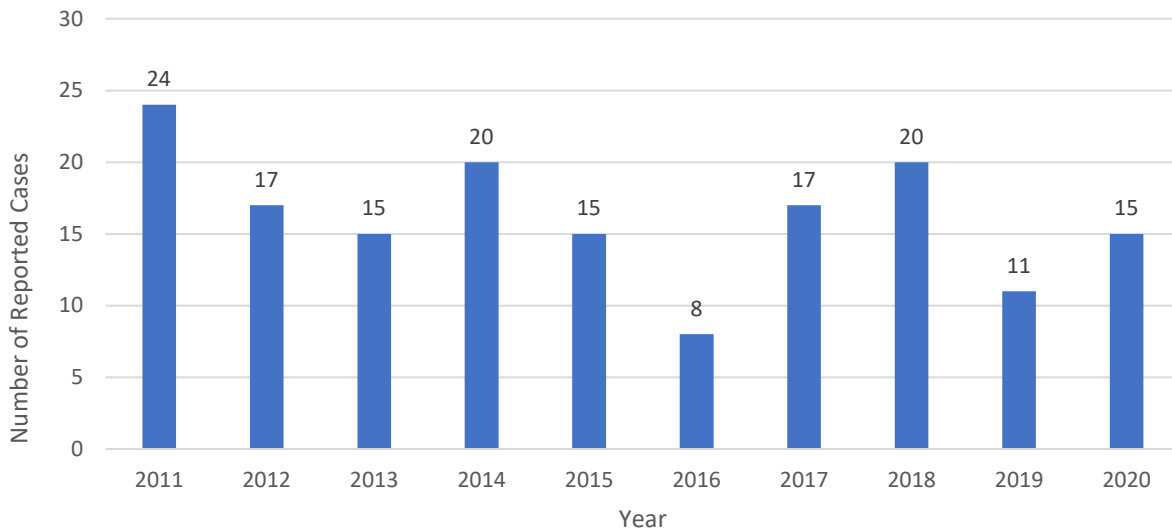
How often does TB occur?

It is estimated that one-quarter of the world's population is infected with TB. TB is endemic in many countries, with 86% of cases occurring in 30 high burden countries in 2020; although the U.S. is not among these countries, cases continue to occur, making it essential to continue screening for cases and treating cases.[4]

How often does TB occur in Allegheny County?

In Allegheny County, an average of 16 clinically active TB cases were reported per year between 2011-2020 (Figure 1). The highest number of cases reported to ACHD in a single year was in 2011 with 24 cases, while the lowest number of cases reported to ACHD was in 2016 with 8 cases.

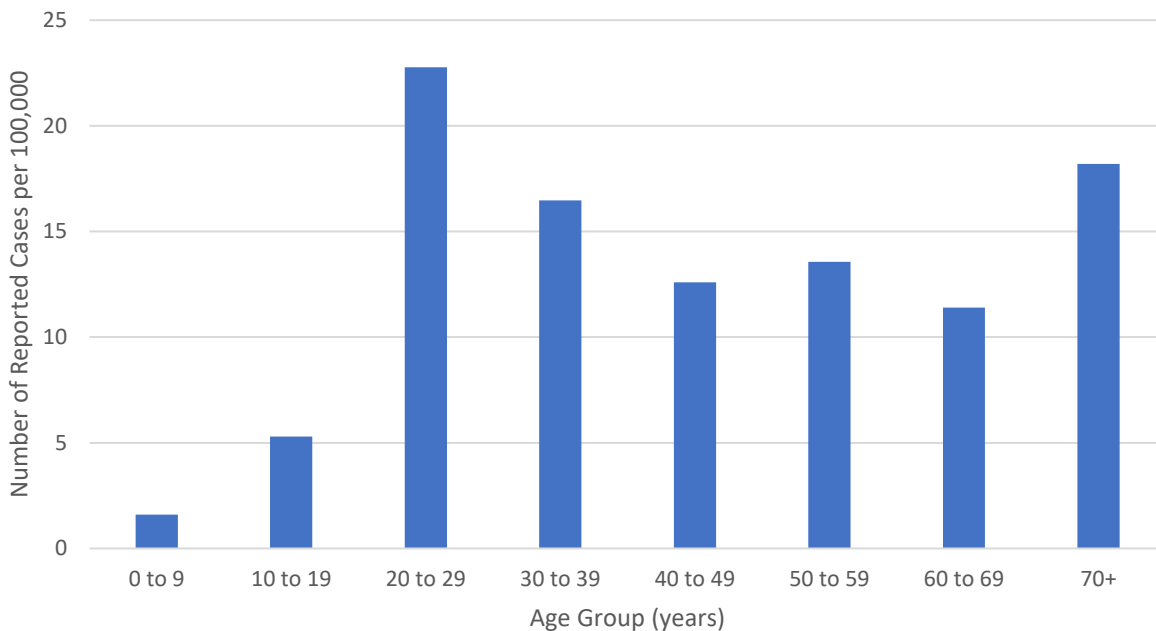
Figure 1. Active TB cases by year in Allegheny County, 2011-2020



In 2020, 15 active TB cases were reported, for a crude incidence rate of 1.2 cases per 100,000 persons, an increase of 33% from the 2019 incidence rate of 0.9 per 100,000; however, compared with the U.S. incidence rate of 2.2 per 100,000 in 2020, the rate in Allegheny County was 45% lower.

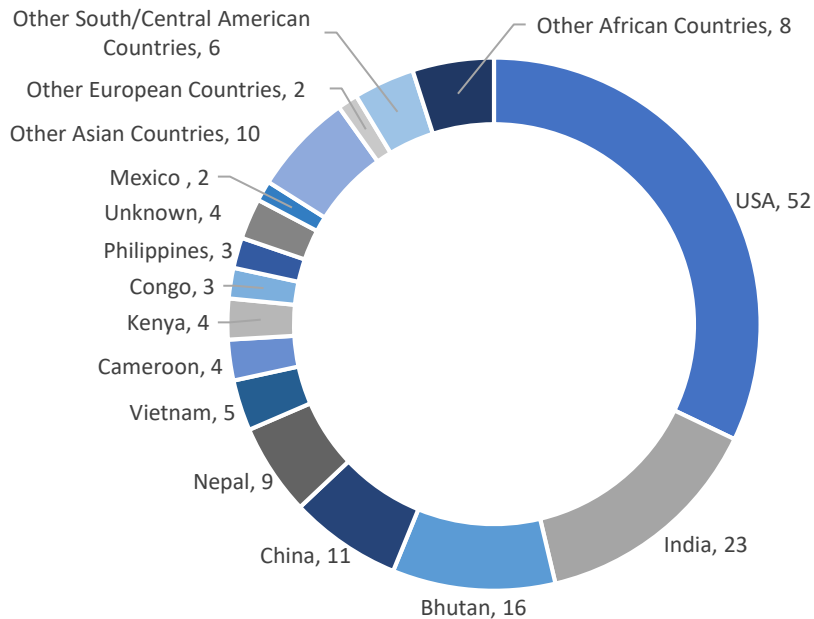
From 2011 to 2020, 162 cases of active TB were reported in Allegheny County. Cases were more frequent in males (58.6%) and Asian individuals (41.4%). The highest rate of TB occurred in individuals 20 to 29 years (22.8 per 100,000), followed by those 70+ years (18.2 per 100,000) (Figure 2).

Figure 2. Age-specific rates of active TB in Allegheny County, 2011-2020



Country of birth was known for 158 (98%) of newly reported active TB cases from 2011-2020. Of these, 67% were foreign born – most frequently born in India (15%), Bhutan (10%), China (7%) and Nepal (6%) (Figure 3).

Figure 3. Active TB cases by country of birth in Allegheny County, 2011-2020



Of the 15 active TB cases in 2020, 8 (53%) had a pulmonary infection, 5 (33%) had a non-pulmonary infection (eg. lymphatic, eye, bone/joint, other), and 2 (13%) had both pulmonary and non-pulmonary infection. Additionally, 2 (13%) cases were known to be HIV-positive. Twelve cases were tested for resistance to TB medications, including ethambutol, isoniazid, pyrazinamide, and rifampin; the other three cases were not tested for resistance. Among the twelve tested specimens, all were found to be susceptible to the corresponding drug, except one specimen that was resistant to pyrazinamide.

References:

- [1] Centers for Disease Control and Prevention. Basic TB Facts. Available at: [Signs & Symptoms | Basic TB Facts | TB | CDC](#)
- [2] Centers for Disease Control and Prevention. TB 101 for Health Care Workers. Available at: <https://www.cdc.gov/tb/webcourses/tb101/page1796.html>
- [3] Centers for Disease Control and Prevention. Questions and Answers About Tuberculosis. Available at: <https://www.cdc.gov/tb/publications/fags/tb-qa.htm#how-keep-spread>
- [4] World Health Organization. 10 facts on tuberculosis. Available at: [10 facts on tuberculosis \(who.int\)](#)