After 20-Year Drop, Concern Rises as TB Infections Level Off

By Lila Abassi — March 25, 2016

More than two billion people, roughly one third of the world’s population, are infected with *Mycobacterium tuberculosis*, the causative agent of tuberculosis. The last several decades have seen substantial decreases in the cases of newly diagnosed TB, with the exception of the period between 1985 to 1992.

This success is largely owed to improved public health efforts, physician and patient education, infection control measures and the use of directly observed therapy.

Unfortunately, however, the recent publication of the Center for Disease Control and Prevention’s “Morbidity and Mortality Weekly Report,” the incidence of TB in the United States have leveled off. The last two decades had seen annual decreases of 0.2 or more cases per 100,000 persons. Preliminary data for 2015 reveal that there are three cases per 100,000 persons, which is approximately the same as the period between 2013 and 2014 which is not consistent with the declines observed in previous years.

According to CDC Director Tom Frieden, MD, "It’s always concerning when we see progress stall – especially when there are proven interventions to prevent a disease."

What this indicates, according to the MMWR, is the need for intensifying domestic and international efforts toward detecting and treating latent TB infections, interrupting TB transmission as well as accelerating reductions of TB globally.

In the U.S., most of the cases of TB occur in individuals with reactivation of latent TB in those individuals who were born outside of the country but have been residing in the country for five years or less. Transmission of disease does not account for as many of the cases of TB.

The CDC’s National Tuberculosis Surveillance System reports that TB incidence in foreign-born
individuals is about 13 times that of U.S.-born persons (15.1 versus 1.2 cases per 100,000). The top five countries of origin for foreign-born individuals were Mexico, the Philippines, India, Vietnam and China, accounting for close to 57 percent of all TB cases in foreign-born persons.

TB is the second most-common cause of death from an infectious cause, with HIV being the first. TB is most commonly transmitted via aerosol droplets containing the bacterium, *M. tuberculosis*. The lungs are the first destination for infective agent where one of four things can happen:

- Immune system clears the bacterium
- Primary infection – immediate onset of active disease
- Latent infection
- Reactivation disease – many years after a period of latency

If the immune system is incapable of clearing the infection, unchecked growth of the organism can lead to its dissemination to distal areas via the bloodstream.

Treatment of TB is almost always curative, so long as the patients are treated with effective and uninterrupted antituberculous therapy, with adherence to treatment being critically important. If there is incomplete adherence there is a serious risk of developing an infection that is much more difficult to treat and will likely result in drug resistance. Treatment strategies have shown that direct observation of therapy (DOT) maximizes adherence and has become standard of care in the control and prevention of TB.

Drugs used to treat non-resistant infection include what is referred to as R.I.P.E. – rifampin, isoniazid, pyrazinamide, and ethambutol.

Hopefully, this report will further mobilize public health efforts to take this disease more seriously and ensure that all cases of TB are dealt with swiftly and appropriately.

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