

The Tuberculosis Outbreak

A male Indonesian national was diagnosed with infectious Tuberculosis (TB) while living illegally in the United States. Tuberculosis is a serious infectious bacterial disease that mainly affects the lungs. The bacteria that causes TB are spread when an infected person coughs or sneezes. Most infections show no symptoms, in which case it is known as latent tuberculosis. About 10% of latent infections progress into active disease which, if left untreated, kills about half of those affected. Tuberculosis is spread from one person to the next through the air when people who have active TB in their lungs cough, spit, speak, or sneeze. As of 2018 one quarter of the world's population is thought to have latent infection with TB. New infections occur in about 1% of the population each year. In 2018, there were more than 10 million cases of active TB which resulted in 1.5 million deaths. This makes it the number one cause of death from an infectious disease.

Tuberculosis caused widespread public concern in the 19th and early 20th centuries as the disease became common among the urban poor. In 1815 one in four deaths in England was due to TB, what they called "consumption". By 1918, TB still caused one in six deaths in France. After TB was determined to be contagious, in the 1880s, it was put on a notifiable-disease list in Britain. Campaigns were started to stop people from spitting in public places, and the infected poor were "encouraged" to enter sanatoria that resembled prisons (the sanatoria for the middle and upper classes offered excellent care and constant medical attention).

There have been great medical advances and drugs developed to treat TB. It is very important that people who have TB disease are treated, finish the medicine, and take the drugs exactly as prescribed. If they stop taking the drugs too soon, they can become sick again; if they do not take the drugs correctly, the TB bacteria that are still alive may become resistant to those drugs. TB that is resistant to drugs is harder and more expensive to treat. **TB disease can be treated by taking several drugs for 6 to 9 months.**

Once diagnosed, the Indonesian national was hospitalized for treatment. After 10 days of treatment, he disappeared from the hospital and went underground. When questioned, people who knew him said that he was planning to leave or had already left the country to visit family. He was placed on the CDC border control watch list. About two weeks later, he was apprehended on a commercial bus at a Canadian border crossing re-entering the U.S. when border officials checked passengers' documents. He was transferred to local authorities and was hospitalized at the University of Buffalo's General Medical Center and found to be still infectious with TB. He refused to give any information to public health officials about his travels, where he stayed, what modes of transportation taken during the two weeks since leaving U.S. Furthermore, he refused to name who he had been in contact with. The only verifiable information was that he had boarded the bus that afternoon in Toronto, in route to New York with stops along the way where other passengers disembarked and others boarded.

The bus company does not collect any passenger or seating information, so there was no way to identify the other passengers on the bus, other than the 18 who did cross the border and could be identified from U.S. border records. There were 47 other passengers who got off or on at various places before the border crossing; most having travelled from Toronto. The total of 65 passengers was the maximum the bus could hold. The patient was found to be highly infectious. There is no evidence about transmission rates for TB on buses, only flights longer than eight hours are followed-up upon, and many health units would not consider four to six hours of exposure to be significant.

For the past year, the patient was working illegally for cash, washing dishes at a popular Indonesian restaurant. When checked, six of this patient's eight children were tuberculin skin test positive. Two of which had active TB disease. All of the children attended k-12 schools in

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New York City. These schools are inner-city, poorly performing schools. Most attendees are underprivileged with difficult socio-economic challenges.

This case highlights the difficult tradeoffs elected officials face in making public policy decisions trying to balance public health concerns and infringement of civil liberties guaranteed by the United States' founding documents and principles (Declaration of Independence, Constitution, and Bill of Rights) during times of epidemics and pandemics.

- What ethical issues are raised by this case?
- Should the family be deported? Who is going to pay for extended hospital stays and medical treatments and drugs for 6 to 9 months? Should the contagious family members be forced to seek treatment by forcibly guaranteeing them?
- Should the School Board of Education shut down the school until all students and teachers are tested and found to be disease free? How are families supposed to cope with sudden decisions to shut down schools, when most student's families are single parent, working moms and dads? How are these vulnerable children not a risk of falling farther behind when schools are shut down and not prepared (technology and training) to teach virtually?
- Should the local Department of Health shut down the restaurant? What about the livelihood of the restaurant owner and workers? In the hospitality business, momentum is important. If a restaurant is closed for a month, will patrons abandon this particular restaurant and its future put in jeopardy?
- In the late 1800s, governments established sanitariums to house and treat people afflicted with TB. In modern times, should infectious disease instances warrant the segregation of those suffering from the disease for the good of the community? Or, should local authorities rely on TB patients to self quarantine? Is it ethical to impose quarantine against peoples will.
- What should the public health department do in relation to the Canadian contacts of this patient?
- Many mothers and fathers are worried about the long term affects of vaccinations or some have religious or cultural objections to vaccines. Should vaccinations against infectious diseases be mandatory to protect public health? Is mandating vaccination an ethical question?
- Should contact tracing via smart phone apps be a new normal? What are the implications to personal privacy and freedoms?
- Is it the role of government to protect citizens from disease? Should the government enact laws to protect us? Should smoking be band? Should all citizens be assigned a maximum weight? Should "junk food and drinks" be band? Reenact prohibition? Daily exercise requirements be mandated? Electronically control car speed limits to was is posted? Why should infectious disease be treated differently?
- Are there any broader societal issues raised by this case? How, if at all, are they relevant to the ethical issues?