

Tuberculosis

Community information

Introduction

Australia is relatively fortunate in that, compared to other parts of the world, the incidence of tuberculosis (TB) is still low.

Key messages for the public are:

- TB is not widespread in Australia; it affects mainly immigrants from countries of high TB prevalence, those whose immune system is weakened by disease, the elderly (both Australian born and new immigrants) and those who are socially disadvantaged, such as the homeless.
- TB is easily treatable and almost 100 per cent curable. Left untreated, however, it can cause serious illness and even death, and may spread to others in the community.
- By being aware of TB and by seeking medical attention when in doubt, we can prevent it becoming a major problem in Australia.

What is TB?

TB is an infectious disease caused by the bacterium known as *Mycobacterium tuberculosis*. Unlike other infections, TB bacteria can remain dormant in the body for weeks, months, years, or a lifetime depending on the individual's level of immunity. It is only in a few individuals, whose immune system becomes weakened, that the disease we know as 'TB' (which we will refer to in this document as TB disease, to distinguish it from TB infection) occurs.

TB bacteria can lodge in the lungs and cause the disease-about 50 per cent or more of TB disease occurs in the lungs. TB disease can also occur in the lymph glands, brain, spine, kidneys or other organs. These latter conditions cannot infect others.

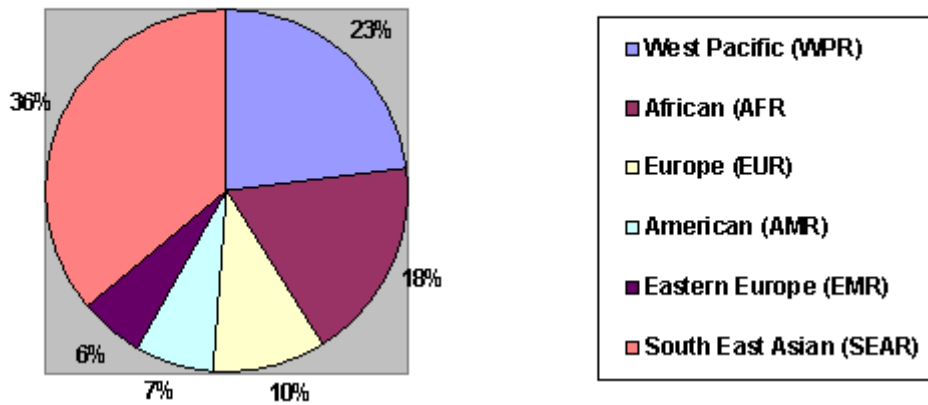
The global situation

Tuberculosis has caused serious illness and death for centuries. There has been a common misconception that TB was eradicated in the western world but, in fact, it has always been present. In Australia, we still see about 900-1000 cases a year.

The World Health Organisation (WHO) estimated that TB currently infects one-third of the world's population (about 1.7 billion people) and will claim at least 30 million lives in the next 10 years; most of these will be from Third World countries. In addition, the coexistence of HIV and TB infection causes an additional burden. TB in HIV infected persons is difficult to cure and has a high death rate in countries where there is limited access to TB and / or HIV medications. HIV testing in several developing countries has shown that as many as 70 per cent of TB cases are also co-infected with HIV.

In the USA, TB was on the increase in the early 1990s. A combination of factors is thought to be responsible for this increase, including the high rate of HIV infection, overcrowding, limited health care resources and falling living standards. In the USA, large outbreaks of TB have occurred in institutions, particularly in prisons and hospitals, predominantly affecting HIV infected persons.

Rates in Regions of the World (1998 WHO regions)



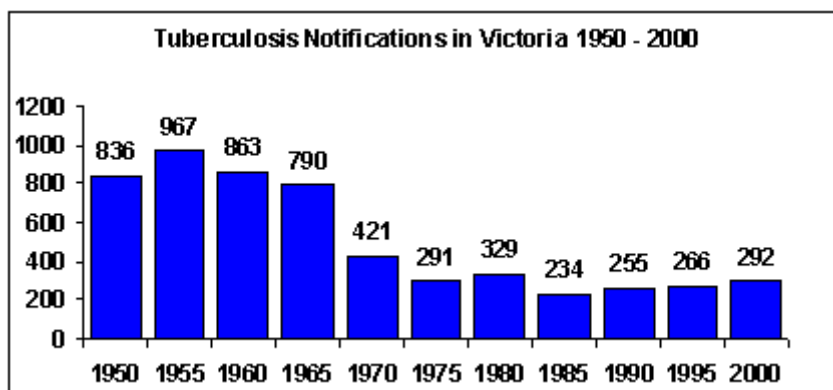
The Australian situation

By global standards, Australia is managing well. The introduction of anti-TB drugs and a concerted public health campaign in the 1950s, as well as improved living standards, had a significant impact on the control of TB.

While WHO has declared TB a global emergency, with the disease out of control in many parts of the world, the incidence of TB in Australia remains one of the lowest in the world with around 900-1000 new cases each year (incidence: 5/100,000 in 1998). In Victoria, cases of TB have dropped dramatically from over 1,000 cases in 1954 to 292 in 2000. The factors responsible for the resurgence of TB in early 1990 in the USA, in particular widespread HIV infection, are not present to the same extent in Australia. It is possible that Australia could face similar problems in the future, and we need to continue measures to guard against this. These measures include:

- Increased awareness and surveillance for TB.
- Screening of high risk groups.
- Ensuring proper treatment of persons with TB disease in order to minimise drug resistance.

We see only one to two cases of TB per 100,000 Australian born persons currently. In contrast, we see 50-100 times more cases in selected groups including people born overseas, some aboriginal communities, those with HIV infection and those with significant social disadvantage.



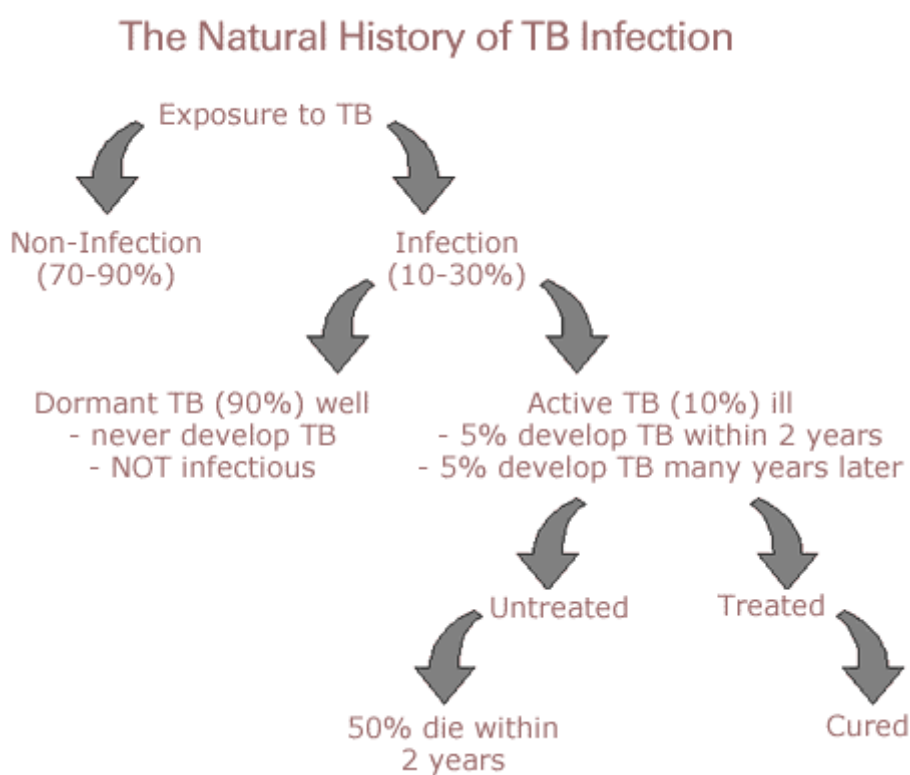
How is TB transmitted?

Transmission of TB occurs mainly by inhalation of infectious droplets, produced during coughing by people with active TB disease of the lung. People in casual contact with infectious patients are at low risk - it is those in continuous, close contact such as those living in the same household who are at most risk.

Who is likely to get TB?

Anyone in close continuous contact with a person suffering from TB disease of the lung may be infected and contract the disease. There are, however, certain groups in the community who are at increased risk of TB disease, if infected. These groups include:

- Immigrants and refugees, especially those from developing countries
- Aboriginal people and Torres Strait Islanders
- Persons whose immunity is suppressed, especially those on long term steroids
- Diabetics
- Those with HIV infection and AIDS
- Elderly people
- Persons living in sub-standard, overcrowded conditions (TB occurs most frequently in poverty stricken communities)
- Institutionalised persons including prisoners
- Alcoholics
- Health professionals



Not everyone diagnosed as being infected with TB will develop the disease. TB disease is not the same as being infected with TB.

The above chart shows that only 10-30 per cent of those exposed to the TB bacteria become infected, and only 10 per cent of these people will actually develop TB disease.

How is TB diagnosed?

TB disease is diagnosed by:

- The symptoms experienced by the patient.
- Finding the bacteria in a specimen from the patient.
- Chest x-rays.

In general, anyone with TB disease will experience the following symptoms:

- A long term cough, and at times blood may be coughed up (if the TB disease is in the lungs).
- Fevers and night sweats.
- Loss of weight.
- Feeling generally unwell.

What about the Mantoux test?

The Mantoux test is a skin test used to detect TB infection. The test entails having a small needle inserted into the arm and a tiny amount of fluid injected, just under the skin. Any reaction is measured or 'read' in 48-72 hours.

A positive test indicates exposure to TB or a TB-like bacteria or BCG vaccination in the past. Over 90 per cent of positive Mantoux tests are due to previous BCG vaccination: a positive test therefore does not necessarily indicate natural TB infection.

Will BCG protect against TB?

BCG stands for Bacillus Calmette-Guerin. It is a live vaccine - that means it contains living TB-like bacteria. It cannot cause illness in humans however, but is similar enough to *Mycobacterium tuberculosis* to offer some protection against it.

The effect of BCG in adults is variable, but overall it is accepted that BCG protects infants and young children from getting certain serious forms of TB. The National Health & Medical Research Council (NH&MRC) does not recommend routine BCG immunisation of the general Australian community where the risk of exposure to TB is low. Routine BCG immunisation is only indicated for specific groups at high risk for TB. In Victoria, BCG immunisation of school children ceased in 1984.

How is TB treated?

TB is curable if treated appropriately. This involves taking a course of tablets, usually for six months. Medication must be taken continuously for the full period; if not the disease will not be controlled and may even get worse. Non-adherence to prescribed treatment causes drug-resistant strains of TB to emerge.

What Is multi-drug resistant TB (MDRTB)?

MDRTB stands for multi-drug resistant TB. This is a strain of TB that does not respond to conventional anti-tuberculosis drugs. MDRTB develops when people do not take their medication for the full treatment period. Fortunately, MDRTB is rare in Australia, accounting for less than two per cent of all TB strains each year. It is, however, a significant problem in the USA and in developing countries.

Notification of TB

Tuberculosis is a notifiable disease. Notification enables public health authorities to trace, examine and follow up contacts. It is essential for keeping the disease under control, and for the compilation of national statistics and epidemiological data.

A doctor who diagnoses active tuberculosis has a statutory obligation to notify the Department of Human Services. A laboratory, which isolates *M. Tuberculosis* from a biological specimen, is also under statutory obligation to notify Human Services.

Further information

Anyone who has been in contact with a person who has TB disease, or who has any of the common symptoms, should contact their local doctor or the Tuberculosis Program, Department of Human Services, telephone: (61 3) 9637 4115.

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