

ZOONOTIC TB



WHAT IS ZOONOTIC TB?

- Zoonotic tuberculosis (TB) is a form of tuberculosis in people caused by *Mycobacterium bovis*, which belongs to the *M. tuberculosis complex*. Cattle are the most important animal reservoir for *M. bovis* in relation to zoonotic exposure of humans, but the disease can affect many other species and become established in wildlife reservoirs.
- It often affects sites other than the lungs (extrapulmonary), such as lymph nodes of the neck and gastrointestinal tract, but in many cases is clinically indistinguishable from TB caused by *M. tuberculosis*.
- Within livestock populations, *M. bovis* is the causative agent of bovine TB. *M. bovis* affects mainly bovine species and a wide range of wild animal species. It results in important economic losses and trade barriers with a major impact on the livelihoods of poor and marginalized communities.

BURDEN

- In 2015, there were an estimated 149 000 new human cases of zoonotic TB globally, and 13 400 deaths due to zoonotic TB.
- The African region carries the heaviest burden of disease and death due to zoonotic TB, followed by the South-East Asian region.
- The true burden of zoonotic TB is likely to be underestimated due to a lack of routine surveillance data from most countries.

RISK FACTORS

- While the most common route of transmission of *M. bovis* to humans is through food (unpasteurized milk and untreated animal products), airborne infections and direct contact with infected animals also pose an occupational risk to people with frequent direct contact with infected animals or contaminated animal products, including farmers, veterinarians, slaughterhouse workers and butchers.

KEY CHALLENGES

- The laboratory procedures most commonly used to diagnose TB do not differentiate *M. tuberculosis* from *M. bovis*. This leads to under-diagnosis of zoonotic TB.
- Zoonotic TB poses special challenges for patient treatment and recovery. *M. bovis* is naturally resistant to pyrazinamide, one of the four medications used in the standard first-line anti-TB treatment regimen. As most TB patients begin treatment without drug susceptibility testing, patients with zoonotic TB may receive inadequate treatment.
- Zoonotic TB in humans is often extrapulmonary and may be misdiagnosed, and therefore initiation of treatment can be delayed.



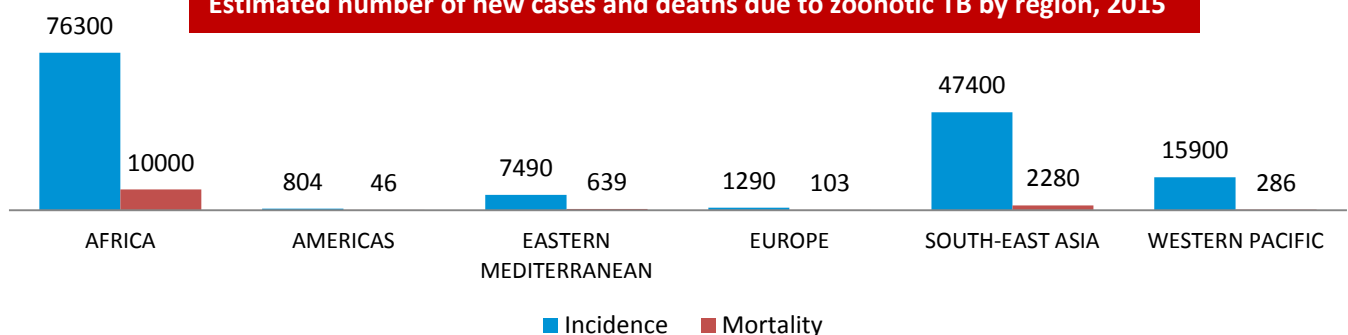
TIMPIYAN LESENI

Zoonotic TB Survivor

"I suffered from abdominal TB as a consequence of my cultural traditions of drinking

unpasteurized milk. I am now working to educate my community on how to fight zoonotic TB through my civil society organization Talaku".

Estimated number of new cases and deaths due to zoonotic TB by region, 2015



ADDRESSING ZONOTIC TB: KEY ACTIONS

Recognizing the public health significance of *M. bovis* infection in people and livestock, the World Health Organization (WHO) and The International Union Against Tuberculosis and Lung Disease convened the first consultation on zoonotic TB in over twenty years in Geneva in April 2016. The meeting brought together experts from both human and animal health sectors, including key international organizations for animal health - the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE). The group formulated key actions to combat zoonotic TB in the context of the WHO End TB Strategy. These are outlined below:



IMPROVE THE SCIENTIFIC EVIDENCE BASE

1. Systematically survey, collect, analyse and report better quality data on the incidence and burden of zoonotic TB in people, and improve surveillance and reporting of TB in livestock.
2. Expand the availability of appropriate diagnostic tools and capacity for testing to identify and characterize zoonotic TB in humans and animals.
3. Identify and address research gaps in human and animal TB, including epidemiology, new diagnostic tools, vaccines, appropriate patient treatment regimens, health systems and services.



REDUCE TRANSMISSION AT THE ANIMAL-HUMAN INTERFACE

4. Identify key populations and risk pathways for transmission of zoonotic TB.
5. Develop capacity of the veterinary sector to reduce the prevalence of TB in livestock and wildlife.
6. Develop strategies to improve food safety (e.g. heat-treated milk, meat inspection).



STRENGTHEN INTERSECTORAL AND COLLABORATIVE APPROACHES

7. Increase awareness of zoonotic TB, engage key public and private stakeholders and establish effective intersectoral collaboration between human and animal health sectors.
8. Develop and implement official policies and guidelines for the prevention, surveillance, diagnosis, and treatment of zoonotic TB, in line with intergovernmental standards where relevant.
9. Identify opportunities for community-tailored interventions that jointly address human and animal health.
10. Develop an investment case to advocate for political commitment and funding to address zoonotic TB across sectors at the global, regional and national levels

Key References

- Olea-Popelka F, et al, Zoonotic tuberculosis in human beings caused by *Mycobacterium bovis*—a call for action. *Lancet Infect Dis* 2016
- WHO Global Tuberculosis Report 2016

ZONOTIC TB MUST BE PRIORITIZED IN THE GLOBAL HEALTH AGENDA

The Sustainable Development Goals (SDGs) emphasise the importance of multidisciplinary approaches to improving health. In the context of the SDGs, the WHO's END TB strategy calls for diagnosis and treatment of every TB case. This must include people affected by zoonotic TB. Zoonotic TB in humans cannot be fully addressed without considering the underlying burden of disease in the animal reservoir and the risk pathways for transmission at the animal-human interface - a **One Health** approach linking animal, human, and environmental health sectors. At the national level, inter-ministerial collaborations between human and animal health sectors must be in place in order to ensure effective surveillance, prevention and control of zoonotic TB. The tripartite of WHO, FAO and OIE together with The Union are leading the development of a comprehensive roadmap for combatting zoonotic TB in both people and animals.