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Controlling bovine tuberculosis: a One Health challenge



PERSPECTIVES

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Dairy production in low- and middle-income countries (LMICs) continues to attract substantial development support. This is because the majority of production comes from smallholder farmers, and dairy development is a powerful tool for economic growth, food security, nutrition and poverty reduction. Since bovine tuberculosis (bTB) limits dairy productivity and represents a public health threat, accelerating bTB control is a priority for the Bill & Melinda Gates Foundation.

In stark contrast to high-income countries, where bTB is largely controlled in livestock and therefore less important for public health, similar control programmes have not been implemented in most LMICs. This, despite growing evidence of a high and widespread bTB prevalence in LMICs; for example, in Africa and India [1, 2]. Given both the close association of humans with cattle, and the fact that milk is often sold unprocessed in LMICs, there is also considerable risk of zoonotic transmission. However, because of technical and logistical constraints, the true burden of zoonotic tuberculosis in LMICs remains unknown.

Herein lies the key problem: low awareness of bTB means that support for its control remains limited; and limited support means that few resources are available to build awareness. Hence, in LMICs, where disease has the greatest negative impacts, bTB control efforts remain piecemeal and insufficient.

The true burden of zoonotic tuberculosis in low- and middle-income countries remains unknown

Despite these challenges, we find cause for optimism with a confluence of emerging factors that are likely to increase awareness and provide a renewed urgency to drive bTB control in LMICs.

These factors include:

- a)** WHO's End Tuberculosis Strategy, and the prioritisation of zoonotic tuberculosis at the global level, along with the launch of the first zoonotic tuberculosis roadmap;
- b)** recognition that the dairy sector in Africa and India is rapidly transitioning and, while intensification of dairy production in LMICs increases bTB risk, it also provides opportunities for novel interventions;
- c)** strengthening partnerships between donor organisations, multinational institutions, pharmaceutical industries, dairy organisations, and the governments of countries in which tuberculosis is endemic. Such multidisciplinary, One Health partnerships are essential to promote integrated research, surveillance and control programmes, and the development of evidence-based policy frameworks to accelerate bTB control, improve animal productivity, and protect human health.

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PERSPECTIVES

Accelerating bovine tuberculosis control in lower-income settings

KEYWORDS

#Bill & Melinda Gates Foundation, #bovine tuberculosis, #dairy production, #low- and middle-income country (LMIC).

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REFERENCES

1. Müller B., Dürr S., Alonso S., Hattendorf J., Laise C.J., Parsons S.D., van Helden P.D. & Zinsstag J. (2013). – Zoonotic *Mycobacterium bovis*-induced tuberculosis in humans. *Emerg. Infect. Dis.*, **19** (6), 899–908. <https://dx.doi.org/10.3201/eid1906.120543>.
2. Srinivasan S., Easterling L., Rimal B., Niu X.M., Conlan A.J.K., Dudas P. & Kapur V. (2018). – Prevalence of bovine tuberculosis in India: A systematic review and meta-analysis. *Transbound. Emerg. Dis.*, **2018**, 1–14. <https://doi.org/10.1111/tbed.12915>.

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