

Food insecurity leads to increased incidence of tuberculosis in Zimbabwe

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This photo shows University of Toronto professor Michael Silverman with school boys in Africa. Credit: Michael Silverman

The rise of tuberculosis (TB) in Zimbabwe during the socio-economic crisis of 2008-9 has been linked to widespread food shortage, according to a new study led by Canadian researchers from the University of Toronto Dalla Lana School of Public Health published in *PLOS ONE*.

"This was the first study to detect the recent TB outbreak in Zimbabwe, and the first anywhere to suggest an association between rising TB incidence and national economic decline in the absence of armed conflict," said Michael Silverman, assistant professor at the Dalla Lana School of Public Health and senior author of the study. Although the same phenomenon may occur with other infectious diseases, the study focused on TB – one of the largest causes of morbidity and mortality in Zimbabwe, especially among people living with HIV.

"Zimbabwe may have been predisposed to this TB outbreak due to the presence of a large HIV-positive population who were particularly vulnerable to the effects of [food](#) shortages which led to malnutrition and further damage to already weakened immune systems," said Silverman.

Many developing countries have large HIV positive populations and thus socioeconomic instability could lead to a similar problem elsewhere. "This finding emphasizes the importance of adequate food availability in controlling TB incidence, particularly in areas with high HIV prevalence," said Silverman.

The study also demonstrated that TB incidence appears to be seasonal, with a larger number of cases when food is scarce in the dry season and lower numbers of cases post-harvest when food is more plentiful. Research data also suggests that TB incidence fell back to pre-crisis levels when the economy of the country and food security improved after 2009.

"Political instability can lead to [economic instability](#), and this can lead to a health crisis with the most vulnerable people in society the most likely to be harmed," said Silverman. "It is important for political leaders to be aware that in addition to economic costs, political conflict can potentially have very serious [health](#) implications for vulnerable communities."

Provided by University of Toronto

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