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Engaging health-care workers to reduce tuberculosis transmission

Although the proportion of global tuberculosis cases that arise from nosocomial transmission is unknown, many studies document that ongoing transmission in health-care facilities, primarily from undetected cases, is an important driver of the tuberculosis epidemic.¹ Health-care workers are disproportionately affected by the occupational hazard of tuberculosis transmission, with at least a three times higher incidence of active tuberculosis shown in low-income and middle-income countries.² A similar situation is also likely to affect community care providers in regions with a high tuberculosis burden, although data are scarce. Despite the existence of evidence-based guidelines on tuberculosis-specific infection control, studies^{3,4} evaluating tuberculosis in affected health-care workers in resource-limited settings identified a lack of tuberculosis infection control programmes in most health-care facilities. The use of personal protective equipment is consistently sub-optimal, and reliable access to N95 respirators, which are standard respiratory protection masks, is often missing.⁵ Although the ethical obligation of health-care workers to provide care to patients might involve some degree of risk, there is also an ethical duty for those responsible for health systems to provide health-care workers with a safe working environment.⁶

Health-care workers represent a precious and scarce resource, particularly within tuberculosis settings.⁷ Yet occupational health programmes in settings with a high tuberculosis burden are usually weak or absent

and this leads to a lack of routine surveillance data recording the extent of the transmission risk. Stigma impedes care-seeking behaviour, often leading to delayed diagnosis and treatment, and limits disclosure within a health-care worker's home institution.⁸ Substantial morbidity and mortality is associated with an increased risk of tuberculosis acquisition, particularly for health-care workers with HIV.⁹ Of the health-care workers who recover from tuberculosis, many are subsequently less likely to return to work.¹⁰ Although these individuals often have an impaired perception of the risk of transmission because of habituation to the risks of working in



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a tuberculosis-endemic setting, the absence of workplace safety can also affect motivation and negatively affect performance. However, unlike other high-risk groups for tuberculosis acquisition, health-care workers can act as effective agents for change through awareness, through advocacy, and, critically, by acting to implement changes at the front lines at which they serve.

A renewed focus on tuberculosis infection control is needed. In settings with a high tuberculosis burden in which most nosocomial tuberculosis transmission occurs, the prevalence of latent tuberculosis infection is high. The knowledge that many health-care workers are already infected might contribute to under-prioritisation of the efforts in tuberculosis infection control. Refocusing on preventing ongoing transmission, including the risk of reinfection, could be important for raising awareness and concern. FAST (active case finding using rapid molecular diagnostics, safe isolation, and early effective treatment initiation) is an administrative transmission prevention approach,¹¹ referenced in the End TB strategy by WHO,¹² which could play a crucial part in decreasing nosocomial tuberculosis transmission. Accordingly, the new End TB Strategy 2016–35 includes tuberculosis infection control as a means to contain transmission.¹³ Other important transmission prevention strategies include institutional building designs that maximise natural ventilation and the use of germicidal ultraviolet air disinfection and adequate provision of personal protective equipment.¹ These strategies must be incorporated as part of general health-facility planning and design, with a focus on strengthening health service infrastructure to ensure the sustainability of transmission prevention strategies for tuberculosis and other infectious diseases.¹⁴

Policies alone have not resulted in implementation of recommendations for tuberculosis infection control. Health-care worker advocacy and leadership for change are needed. Robust occupational health systems must be developed and prioritised.¹⁵ At the health-care facility level, occupation should be added as standard to tuberculosis case record forms so that this information can be monitored and evaluated. Health-care facilities where medical and nursing students are trained present excellent opportunities

to engage, educate, and empower health-care workers to protect themselves and their patients from tuberculosis transmission.¹⁶ Implementation of tuberculosis infection control strategies such as FAST must facilitate linkage to care, including proper coordination of the private sector and other care providers with national tuberculosis programmes. Non-governmental organisations and trade unions that advocate for health-care worker safety are also key players in efforts to raise awareness, eliminate stigma and discrimination, and mobilise the wider community of health-care workers.

Increased attention to tuberculosis transmission prevention and infection control requires political commitment expressed in financial investment and supportive legal frameworks. An empowered, interconnected group of health-care workers who are committed to safeguarding themselves and those they care for is essential to advocate for change and ultimately contribute to ending the tuberculosis epidemic worldwide.

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Corrections

Green E, Hunt L, Ross JCG, et al. Viraemia and Ebola virus secretion in survivors of Ebola virus disease in Sierra Leone: a cross-sectional cohort study. *Lancet Infect Dis* 2016; published online May 16. [http://dx.doi.org/10.1016/S1473-3099\(16\)30060-3](http://dx.doi.org/10.1016/S1473-3099(16)30060-3)—In the Methods section of this Article, the year that the survivor clinic was open should have been “2015”. This correction has been made to the online version as of June 14, 2016.

Walson J, Singa B, Sangaré L, et al. Empiric deworming to delay HIV disease progression in adults with HIV who are ineligible for initiation of antiretroviral treatment (the HEAT study): a multi-site, randomised trial. *Lancet Infect Dis* 2012; **12**: 925–32—In this Article, the correct ClinicaTrials.gov number should be NCT00507221. This correction has been made to the online version as of July 18, 2016.



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