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Universal health coverage: an effective intervention for a tuberculosis-free world



Tuberculosis morbidity and mortality should be considered unacceptable given the high availability of therapeutic and preventative options. However, vulnerable populations and those with low socioeconomic status face unequal access to diagnosis and treatment.¹ Additionally, the increase in poverty and social inequality caused by the current COVID-19 pandemic, combined with the intermittence of health services during the pandemic, has led to a predicted increase in the tuberculosis burden worldwide.² Among the barriers that restrict tuberculosis control, weak health systems caused by unregulated non-state sector barriers to reaching universal health coverage (UHC) and accessing currently available methods of diagnosis and treatment stand out as a particular issue.³ As considered by WHO in the End TB Strategy, UHC is one of the most feasible and effective interventions that could reduce the tuberculosis burden in low-income and middle-income countries, and an effective strategy to reach UHC could be the expansion of primary health care.⁴

Brazil has historically implemented one of the world's largest primary health care systems, the Family Health Strategy (FHS). Previous research in Brazil showed that increasing coverage of the FHS was associated with improvements in child mortality, among other outcomes.⁵ Regarding tuberculosis, research efforts have been concentrated in the evaluation of this strategy mainly through ecological studies,^{6,7} but this study design does not allow inference of causality. To convince governments of the importance of implementing a large and strong UHC strategy, there is an urgent need for more robust studies to help us understand the causal effect of UHC in tuberculosis morbidity and mortality.

In *The Lancet Global Health*, Gabriela Jesus and colleagues⁸ showed, for the first time to our knowledge, the impact of the FHS on indicators of tuberculosis morbidity and mortality in a cohort study with linkage of nationwide health and socioeconomic administrative datasets. The study included a cohort of 7.3 million Brazilian people followed up for 10 years (2004–13) and detected 7184 new cases of tuberculosis over the entire period. 3007 new cases of tuberculosis in people living in municipalities with no FHS coverage were compared

with 4177 cases in people living in municipalities with full FHS coverage. Using a quasi-experimental design, the authors found an association between primary health care and reduced tuberculosis incidence (rate ratio 0.78, 95% CI 0.72–0.84) and mortality (0.72, 0.55–0.94) and increased tuberculosis cure rates (1.04, 1.00–1.08). Additionally, the study showed that primary health care might have a role in reduction of health inequalities, since the poorest individuals benefited most from primary health care.

The results of this study are important to hold countries accountable for one of the oldest diseases that afflicts humanity, which depends on extensive policies for elimination. As reported by Jesus and colleagues,⁸ primary health care is a crucial factor to reach the End TB Strategy goals and is particularly important in the context of the current global economic recession due to COVID-19. The study was done because of the availability of nationwide routine surveillance datasets for tuberculosis morbidity and mortality, as well as sociodemographic information for the poorest people in Brazil. Finally, the study an important opportunity for the Brazilian government for the expansion of the FHS, since its stagnation because of fiscal austerity measures.⁹

In conclusion, to be successful, traditional tuberculosis control activities (prevention, diagnosis, and treatment) need to be accessible by all sections of the population. Regarding unequal access, Jesus and colleagues showed the potential of primary health care in the reduction of health inequalities. The study shows robust evidence of the importance of UHC in tuberculosis control, and a potential opportunity for Brazil to strengthen its large UHC strategy, which is particularly important when 48% of Brazilian patients with tuberculosis and their households face catastrophic costs.¹⁰ In support of this study, WHO reinforced in the Global Tuberculosis Report 2021 that global targets to end tuberculosis can only be achieved if diagnostic, treatment, and prevention services are provided within the context of progress towards UHC.¹⁰ Finally, future research priorities have emerged in the context of COVID-19, which include understanding the ability of primary health care to mitigate the expected increase in tuberculosis incidence due to the marked rise

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in poverty rates, representing an important resilience factor during the COVID-19 pandemic.

We declare no competing interests.

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- 1 Bloom BR, Atun R, Cohen T, et al. Tuberculosis. In: Holmes KK, Bertozzi S, Bloom BR, Jha P (eds). *Major Infectious Diseases*. 3rd edn. Washington, DC: The International Bank for Reconstruction and Development, The World Bank, 2017.
- 2 McQuaid CF, Vassall A, Cohen T, Fiekert K, White RG. The impact of COVID-19 on TB: a review of the data. *Int J Tuberc Lung Dis* 2021; **25**: 436–46.
- 3 Uplekar M, Weil D, Lonnroth K, et al. WHO's new end TB strategy. *Lancet* 2015; **385**: 1799–801.
- 4 WHO. *The End TB Strategy: global strategy and targets for tuberculosis prevention, care and control after 2015*. Geneva: World Health Organization, 2014.
- 5 Bastos ML, Menzies D, Hone T, Dehghani K, Trajman A. The impact of the Brazilian family health strategy on selected primary care sensitive conditions: a systematic review. *PLoS One* 2017; **12**: e0182336.
- 6 de Souza RA, Nery JS, Rasella D, et al. Family health and conditional cash transfer in Brazil and its effect on tuberculosis mortality. *Int J Tuberc Lung Dis* 2018; **22**: 1300–06.
- 7 Pelissari DM, Bartholomay P, Jacobs MG, et al. Offer of primary care services and detection of tuberculosis incidence in Brazil. *Rev Saúde Pública* 2018; **52**: 53.
- 8 Jesus GS, Pescarini JM, Silva AF, et al. The effect of primary health care on tuberculosis in a nationwide cohort of 7.3 million Brazilian people: a quasi-experimental study. *Lancet Glob Health* 2022; published online Jan 24. [https://doi.org/10.1016/S2214-109X\(21\)00550-7](https://doi.org/10.1016/S2214-109X(21)00550-7).
- 9 Ministério da Saúde. e-Gestor: informação e Gestão da Atenção Básica. 2021 <https://egestorab.saude.gov.br/paginas/ acessoPublico/relatorios/ relHistoricoCobertura.xhtml> (accessed May 13, 2021).
- 10 WHO. *Global tuberculosis report 2021*. Geneva: World Health Organization, 2021.