Public Health Action

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

VOL 11 NO 1 PUBLISHED 21 MARCH 2021

CORRESPONDENCE

Tackling climate change: measuring the carbon footprint of preventing, diagnosing and treating TB

A. D. Harries,[1,2] L. Martinez,[3] J. M. Chakaya[1,4,5]

http://dx.doi.org/10.5588/pha.20.0076

Dear Editor,

The last three issues of *Public Health Action* in 2020 have included seven papers on TB preventive therapy. This illustrates not only the growing interest in the topic but also the critical role of this strategy in ending TB. The United Nations High-Level Meeting on TB in September 2018 specifically mentioned the need to provide preventive therapy to at least 30 million people between 2018 and 2022.[1] From the perspective of individual disease and community transmission of infection, prevention is always better than cure. The prevention argument is further strengthened by mounting evidence of the considerable burden of post-TB morbidity and disability-adjusted life-years that occurs after successful completion of treatment and which can be averted by preventing TB from developing in the first place.[2] However, despite the compelling arguments for preventive therapy, progress has been slow. Between 2018 and 2019, only 6.3 million people globally received treatment for TB infection.[3]

We need further drivers to persuade us that prevention of TB is a sound strategy. One such driver may be Sustainable Development Goal 13, which demands urgent action to combat climate change and its impact. The Intergovernmental Panel on Climate Change (Geneva, Switzerland) has made it clear that limiting global heating to 1.5°C above pre-industrial levels should reduce the serious public health catastrophes of bush fires and floods that the world is starting to experience.[4] To achieve this, carbon dioxide emissions (known as "carbon footprints"), need to halve by 2030 and to reach net zero by 2050.[4] Emissions of other greenhouse gases must also reach net zero between 2050 and 2070.

Health care professionals can play an important part here. Health care is substantially more energy-intensive than many other commercial and service activities, and is estimated to contribute between 4% and 6% of global emissions.[5] Indeed, in some high-income settings, health care activities can reach as high as 10% of total emissions.[6] While the carbon footprints of some medical and surgical procedures and treatments have been estimated (for example, renal dialysis, cataract surgery, laparoscopic surgery and asthma inhalers),[5] the vast majority have not been quantified, including the diagnosis, treatment and prevention of TB.

We exhort health care scientists experienced in measuring and estimating carbon dioxide emissions to investigate in low-, middle- and high-income countries the carbon footprint of diagnosing and treating drug-susceptible and drug-resistant TB, of providing care for post-TB morbidity and disability and of preventing TB from ever occurring in the first place. It is likely that TB disease prevention will have a much lower carbon footprint than the laborious process of diagnosis and treatment of the disease by cutting the demand for TB care. If this is shown to be so, this would provide a further incentive to health policy makers and national TB programmes to include preventive therapy for at-risk groups, as cost-effectiveness may be beneficial from a societal perspective. Potentially, the argument for preventing TB becomes much more powerful, with the tool becoming one of many we can use to help save the planet.

References

1 United Nations. United Nations Political declaration on the Fight Against Tuberculosis. Co-facilitators' Revised Text. New York, NY, USA: UN, 2018. https://www.un.org/pga/72/wp-content/uploads/sites/51/2018/09/Co-facilitators-Revised-text-Political-Declaraion-on-the-Fight-against-Tuberculosis.pdf Accessed November 2020.
2 Quaife M, et al. Post-tuberculosis mortality and morbidity: valuing the hidden epidemic. Lancet Resp Med 2020; 8: 332–333.
3 World Health Organization. Global tuberculosis report, 2020. CC BY-NC-SA 3.0 IGO. Geneva, Switzerland: WHO, 2020.
4 Intergovernmental Panel on Climate Change. Global warming of 1.5°C. An IPCC Special Report. Geneva, Switzerland: IPCC, 2019. https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_Low_Res.pdf Accessed November 2020.
5 Salas RN, et al. A pathway to net zero emissions for health care. BMJ 2020; 371: m3785.
6 Eckelman MJ, Sherman J. Environmental impacts of the U.S. health care system and effects on public health. PLoS ONE 2016; 11: e0157014.

AFFILIATIONS
1 International Union Against Tuberculosis and Lung Disease, Paris, France
2 Department of Clinical Research, Faculty of Infectious and Tropical Diseases, London School of Hygiene & Tropical Medicine, London, UK
3 Division of Infectious Diseases and Geographic Medicine, School of Medicine, Stanford University, Stanford, CA, USA
4 Department of Medicine, Therapeutics, Dermatology and Psychiatry, Kenyatta University, Nairobi, Kenya
5 Department of Clinical Sciences, Liverpool School of Tropical Medicine, Liverpool, UK

CORRESPONDENCE
Correspondence to: Professor Anthony D Harries, Old Inn Cottage, Vears Lane, Colden Common, Winchester SO21 1TQ, UK. email: adharries@theunion.org

Conflicts of interest: none declared.
Disclaimer: The views expressed in this document are those of the authors and may not necessarily reflect those of their affiliated institutions.

Received 19 November 2020
Accepted 21 December 2020

PHA 2021; 11(1): 40
e-ISSN 2220-8372