CORRESPONDENCE

Can ventilation oust tuberculosis bacilli? Dare to plug the unpluggable

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Tuberculosis (TB) is an airborne transmitted disease with high morbidity and mortality.¹ There is overwhelming evidence to suggest that the risk of TB transmission is high in prisons, schools, home shelters, other congregate settings and health care facilities.^{2,3} Good ventilation, either natural or mechanical, seems to be the optimal solution to reduce the risk of infection in these settings.^{3,4} In tropical countries the climate, coupled with high population density, also favours longer survival of the bacilli.^{5,6}

The United Nations has incorporated TB elimination as a part of its sustainable development goals (SDGs) for 2030. India remains a major contributor to the global TB burden, and its Revised National TB Control Programme (RNTCP) has been implemented since 1997 to curb this menace. The Government of India has recently pledged to eliminate TB by 2025, which is praiseworthy but highly ambitious.⁷ The country has devised various strategies through its National Strategic Plan (2017–2025) to achieve the targets in the next 8 years.⁸ Although the plan has a broad vision, emphasis on airborne infection control measures, particularly at the household level, is sub-optimal. Due to overcrowding and the cultural habit of closing windows during the day or at night, the risk of infection among contacts of TB patients is exacerbated. There is an urgent need to create awareness about the importance of airborne infection control measures in households and communities, such as the importance of free air circulation, either by opening windows (the simplest means of improving ventilation) or by using artificial ventilation, and paying adequate attention to structural changes when designing and constructing homes for the vast population.^{9–11}

The Bureau of Indian Standards recommends that windows should cover at least 20–30% of the floor area.¹² The Government of India's flagship programme of 'Housing for all by 2022', which envisages the construction of houses with basic amenities in urban areas, should give due emphasis to ventilation.¹³ There should be an integrated approach, with actions planned jointly by the Ministry of Health and Family Welfare, the Ministry of Housing and Urban Poverty Alleviation and the Ministry of Culture. A mission like that of 'Swachh Bharat', which was undertaken to improve sanitation, needs to be adopted to bring about this change within the next 10 years.¹⁴ The RNTCP can play its part by providing guidance on structural

and/or mechanical ventilation in the households of TB patients during routine visits by health workers.

Further research is needed to measure the impact of ventilation on TB transmission. India needs an ambitious plan, and the resources to execute the plan. A bottom-up strategy involving simple measures to improve ventilation in households needs to be implemented throughout the country to reduce the risk of TB transmission.

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