

CORRESPONDENCE

Progress on indoor air quality regulation in India

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Dear Editor,

As described in our previous article,¹ we recently studied air quality in the principal administrative buildings in New Delhi, India, and discovered a paradox in the way that indoor air is managed. Dilution ventilation is used as an airborne infection control measure for TB and COVID-19,² but the air brought in for dilution needs to be filtered appropriately to eliminate particulate matter of 2.5 microns diameter, as this is a major pollutant in many cities, including New Delhi.³ Our article highlighted the fact that most buildings used inappropriate filters, and there was a lack of enforceable regulation for indoor air quality in India. The prevailing sentiment was that indoor air quality was classified as an ‘engineering problem’ and not a ‘public health issue’.⁴ Publication of our article in the IJTLD,¹ preceded by the appearance of a fast-tracked preprint of the article on the Union website, provided a great boost to this work and the efforts of the indoor air quality movement in India.

Our article was used in a petition submitted to the National Green Tribunal in New Delhi to regulate on indoor air quality in India. The article is also important because we used the ‘Right to Information Act, 2005’ to obtain reliable information from various government sources.⁵ During the COVID-19 pandemic, a writ was filed in the Delhi High Court, demanding appropriate dilution ventilation in enclosed air conditioned spaces.⁶ This was directed by the court to be treated as a representation, which was served to government

authorities, including pollution control boards. The issue became of even greater concern when the city's pollution control committee stated that indoor air was beyond the mandate of India's primary Air Law, the Air (Prevention and Control of Pollution) Act, 1981.⁷ This law was enacted by the Indian Parliament following India's participation in the United Nations Conference on Human Environment held in Stockholm in 1972. Its preamble stated that it had been created, among other things, for the 'preservation of the quality of air and control of air pollution.'

As any reader will agree, the law should not differentiate between outdoor or indoor air quality, particularly when the indoor air in question is used by a great many people in large, congested spaces (such as shopping malls, hotels, or theatres) that are reliant on air conditioned, enclosed air. Having good air quality and airborne infection control measures is of primary importance for the health and safety of people using such buildings.^{8,9} As a consequence, the National Green Tribunal took cognisance of this matter and held that "substantial question of environment arises" and "there is a need for regulation of indoor air quality at public places".¹⁰ The Tribunal Chairperson, Justice A K Goel, along with five other judicial and expert members invoked the Environment (Protection) Act 1986, Environment Protection (Rules) 1986 and the Air (Pollution and Control of Pollution) Act, 1981, to instruct the immediate creation of a joint committee that would create appropriate standards for indoor air quality within a time frame of 3 months. This committee, to be coordinated by the Central Pollution Control Board, will consist of three important ministries of the Indian Government, namely the Health and Family Welfare Ministry, the Housing and Urban Affairs Ministry and the Ministry of Environment, Forests and Climate Change. This is a landmark order, which will pave the way for enforceable standards for indoor air quality and will enable the fight against airborne diseases and occupational exposure to indoor air pollution.

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References

- 1 Singh R, Dewan A. Air conditioners, airborne infection prevention and air pollution in buildings in New Delhi. *Int J Tuberc Lung Dis* 2022;26(3):288–290.

- 2 Nagaraja SB, Satyanarayana S, Bansal AK. Can ventilation oust tuberculosis bacilli? Dare to plug the unpluggable. *Public Health Action* 2018;8(1):28–28.
- 3 Jones ER, et al. The effects of ventilation and filtration on indoor PM(2.5) in office buildings in four countries. *Build Environ* 2021;200:107975.
- 4 Sundell J, Spengler J, Wargoeki P. Ventilation: why does no one take it seriously? *Indoor Air* 2021;31:605–607.
- 5 Singh R. RTI for research: using the Right to Information Act, 2005 for research in India. New Delhi, India, 2020:pp 1–60.
- 6 Singh R, Dewan A. Using global research on ventilation and airborne infection control for impacting public policy through the Indian Judiciary. *Indoor Built Environ* 2022;31:1438-1440.
- 7 Republic of India. The Air (Prevention and Control of Pollution) Act, 1981. Act no. 14 of 1981. New Delhi, India: Government of India, 1981.
- 8 Guo, M. et al. Review and comparison of HVAC operation guidelines in different countries during the COVID-19 pandemic. *Build Environ* 2021;187:107368.
- 9 Wang F, et al. Indoor-outdoor relationships of PM2.5 in four residential dwellings in winter in the Yangtze River Delta, China. *Environ Pollut* 2016;215:280–289.
- 10 Raja Singh vs. Union of India and Ors. National Green Tribunal at Principal Bench at New Delhi, Order dated 19.04.2022, in OA 206/2022.

Table Summary of the main message of the correspondence

Status quo	Cause of action	Action taker	Consequence
Large, congregational public spaces, which are enclosed and air conditioned, pose a threat to health due to airborne infection spread and risks due to indoor air pollution	The Pollution Control Board stated that indoor air quality was not in the mandate of the primary Air Law of India	The National Green Tribunal of India took cognizance and considered it as a substantial question of the law, recommending that indoor air quality in public spaces be regulated	Three Indian Government ministries, along with the apex Pollution Control Board, will have to create enforceable indoor air quality standards within a fixed time frame of 3 months