

# Rethinking global health governance: toward a “global compact” for reducing the burden of respiratory diseases

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One billion people currently suffer from respiratory diseases globally, and most of them are living in developing countries. Respiratory diseases spread negative effects widely to both life expectancy and disability-adjusted life years (DALYs) in the population. The most recent update evidence of the 2019 Global Burden of Disease Study report revealed that 454.6 million people worldwide had a chronic respiratory disease, with an increase of 39.8% compared to 1990<sup>[1]</sup>; the disease has led to 3.97 million deaths in 2019, with an increase of 28.5% since 1990, and accounted for 1035.3 DALYs per 100,000 population (103.5 million total DALYs, with an increase of 20.8% since 1990). The most prevalent chronic respiratory diseases were chronic obstructive pulmonary disease (COPD) (global prevalence: 2.6%) and asthma (global prevalence: 3.4%). More than 10 million people are infected with tuberculosis and 1.4 million people die of it each year, making it the most common lethal infectious disease, just ranked after the coronavirus disease 2019 (COVID-19) pandemic.<sup>[2]</sup> The current pandemic has claimed the lives of >6 million people, primarily due to respiratory causes.<sup>[3]</sup> Lung cancer kills 1.8 million people each year and is the leading cancer death.<sup>[4]</sup> In 2019, respiratory diseases have comprised three of the top ten causes of death according to the World Health Organization (WHO), leading to >8 million annual deaths.<sup>[5]</sup>

Respiratory diseases are one of the main diseases affecting the health of the Chinese population, as well. In 2019, the top five diseases with the highest mortality rate in China were stroke (20.2%), ischemic heart disease (IHD) (16.7%), lung cancer (9.2%), COPD (6.6%), and Alzheimer's disease (4.7%).<sup>[6]</sup> In 2015, the prevalence of COPD was 8.6%, accounting for 99.9 million Chinese adults >20 years old.<sup>[7]</sup> The prevalence of COPD among people aged ≥40 years was 13.7%, an increase of 67%

compared to the survey results of 2007 (8.2%).<sup>[8]</sup> Similarly, the prevalence of asthma among Chinese residents aged ≥20 years is 4.2%, with >60 million patients in the country.<sup>[9]</sup> The pressure of prevention and treatment of respiratory diseases is no doubt overwhelming in the Chinese health sector.

The risk factors of respiratory diseases include infection, tobacco smoking or second-hand tobacco smoke, radon, asbestos, or other forms of air pollution. According to the WHO's 2017 report on chronic diseases and environmental risk factors, ambient and household air pollution caused, respectively, 2.8 million and 3.7 million non-communicable disease (NCD) deaths of IHD, stroke, COPD, and lung cancer in 2012. Globally, 29% of COPD deaths were attributable to household air pollution, 8% to ambient pollution, and 11% to workplace pollution.<sup>[10]</sup> Among the risk factors for asthma, smoking and excessive body mass index are the two most significant ones; while smoking, particulate matter pollution, ambient ozone pollution, occupational exposure to particulate matter, gases, and fumes, as well as second-hand smoke attribute high risk to COPD.<sup>[11]</sup> Climate change acts as a massive direct threat to respiratory health by promoting or aggravating respiratory diseases, and an indirect threat by increasing the population's exposure to known risk factors of respiratory diseases.<sup>[12]</sup> Changes in meteorological parameters substantially increase respiratory morbidity and mortality in adults with chronic lung diseases, such as asthma and COPD, and other serious lung diseases.<sup>[13,14]</sup> In addition, the COVID-19 pandemic is one of the clear indications that a respiratory disease epidemic can threaten us just in a few days. It also reminds us of the best way to pay close attention to the epidemic and effectively control the global spread of the disease.

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Fortunately, most respiratory diseases are preventable by reducing tobacco use, improving air quality, and implementing new and innovative holistic and integrated approaches to address respiratory diseases and their determinants simultaneously and in coordination. Beijing Call to Action for Lung Health Promotion adopted by the 13<sup>th</sup> general meeting of GARD in Beijing from 26<sup>th</sup> to 27<sup>th</sup> of October 2019 provides a set of solutions for global action.<sup>[15]</sup> From the COVID-19 crisis comes an opportunity to rethink global health governance, prevention, control, and cure of infectious and chronic respiratory diseases, and promotion of respiratory health must be a top priority in global decision-making and action.<sup>[16]</sup>

**Mitigating the Impact of the Environment on Respiratory Diseases.** Based on scientific evidence, WHO suggests that there is no threshold of exposure to the particulate matter below which no adverse health effects would be anticipated.<sup>[17]</sup> Urgent action is needed to realize the commitments to reducing carbon emissions by national governments and international organizations including WHO and other the United Nations (UN) agencies, developmental agencies, foundations, civil society, non-governmental organizations, the private sector including the pharmaceutical industry, and the academic institutions.

**Placing Respiratory Disease on Global Health Agenda.** The 4<sup>th</sup> UN High-Level meeting is expected to be held in 2025. It must make a political decision to spur actions of addressing the growing burden of chronic respiratory diseases such as COPD and asthma worldwide. Reducing the disease burden should be a leading strategy to achieve the Sustainable Development Goals by 2030 and encourage nations to commit.<sup>[18]</sup> Nations must also reiterate their commitments to place respiratory diseases on the national development agenda.

**Strengthening Surveillance of Respiratory Diseases and their Risk Factors.** Proper planning and implementation of prevention and control strategies depend on reliable and comparable information for monitoring the burden of respiratory diseases and their risk factors; the most critical need in most countries is better information. An appropriate approach should be developed to provide adequate evidence of the respiratory diseases' threats and their risk factors, and continuously track disease incidence, which is often essential for monitoring the achievement of the policy objectives.

**Promoting Global Action for Prevention and Control of Respiratory Diseases.** WHO is acknowledged as the leading agency with the capacity to shape global health policies and research agendas through its strong knowledge base, convening powers, and capacity to identify and disseminate the most cost-effective interventions and best practices. WHO has a constitutional mandate to propose conventions, regulations, and recommendations about international health matters.<sup>[19]</sup> Therefore, WHO must take action, in collaboration with relative international organizations, development agencies, civil society, non-governmental organizations, the private sector including the pharmaceutical industry, and academic institutions, to

develop a global strategy for the prevention and control of respiratory diseases, followed by a global action plan to provide a roadmap for its members to take action. The evidence-based interventions for respiratory diseases must be selected as complementary to the "best-buys" included in the WHO's action plan for the prevention and control of NCDs.<sup>[20]</sup>

**Shaping Global Respiratory Disease Research Agenda.** Prioritizing primary care respiratory research needs have been identified by the International Primary Care Respiratory Group for primary care health professionals worldwide.<sup>[21]</sup> However, a prioritized research agenda should encapsulate all relevant themes related to respiratory diseases in the context of the global fight against NCDs, infectious respiratory diseases, and the pandemic of COVID-19. This requires both respiratory-disease-targeted interventions and comprehensive NCD programs with an emphasis on health promotion, prevention, and treatment.<sup>[22]</sup> Furthermore, support from funding agencies is crucial for the implementation of research, that is, for research that explores the most practical and efficient methods of applying knowledge and evidence-based interventions. For example, how can people with COPD and asthma be easily identified at the early stage in primary health care and receive appropriate treatment using mobile digital technologies? How to best guarantee the availability of low-cost generic drugs for people with a high risk of respiratory diseases, particularly COPD and asthma, to ensure their uptake and long-term use without financial impoverishment? What is the long-term impact of climate change on the environment and respiratory diseases? How can the policies and interventions be implemented in high-burden countries? A further research priority is the development of a simple set of indicators for monitoring progress in national implementation.

### Conflicts of interest

None.

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