



Title: What mechanisms of climate change are driving increase in global respiratory disease cases and how can effective global health policy provide a solution?

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Abstract:

Respiratory diseases make up five of the 30 most common causes of death worldwide, they are second only to cardiovascular diseases in accounting for all disability adjusted life years (DALYs), making up 10% of the burden. Altogether, more than 1 billion people suffer from either acute or chronic respiratory diseases. There is growing evidence of climate change increasing the number of people with these diseases through different mechanisms including extreme weather events, temperature increases and air pollution. However, gaps in research and data availability prevent effective health policies from being developed. This report identifies the mechanisms of climate change and respiratory diseases to determine these research gaps and make recommendations on how to transform this evidence into effective health policy.

The first phase of the project determined the project question and feasibility of data analysis. Beginning with the Intergovernmental Panel on Climate Change (IPCC) special report in 2014 and subsequent studies that this led on to, the team determined gaps in climate change and global health and data availability through the IPCC network.

Each reference to respiratory diseases in the report was reviewed by the team and if relevant, the references investigated to determine available literature on the 1) increasing prevalence and burden of respiratory diseases globally, 2) trends in climate change and global warming and the climate change mechanisms associated with respiratory disease, 3) Data available on respiratory disease cases and climate change mechanisms.

Each researcher further researched the available literature on a group of climate change mechanisms (temperature extremes, aeroallergens, infectious disease vectors, pollution, extreme weather events, vulnerability factors) and determined 1) their causation/effect to directly or indirectly promote respiratory disease and/or 2) how this climate change mechanism increases exposure to risk factors for respiratory diseases. As a team, the researchers developed future policy recommendations through success stories and summarises recommendations for future studies and global health policy.