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Air, Water Pollution Major Cause of Death and Disease in China

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ATLANTA – Although China has experienced unprecedented economic growth during the last 15 years, pulling hundreds of millions of its citizens out of poverty, air and water pollution still cause a significant number of deaths and diseases in the country, according to a review published in the March 27, 2010 issue of *The Lancet*.

The review, published in the journal's special issue on China, examines air and water quality concerns in China, and the steps the nation has recently taken toward improvement in these areas. Emory University professor of global environmental health Justin Remais, PhD, co-authored the review.

“Facing the overlap of traditional, modern and emerging environmental dilemmas, China has committed substantial resources to environmental improvement,” says Remais, assistant professor of environmental health at Emory's Rollins School of Public Health. “The country has the opportunity to address its national environmental health challenges and to assume a central role in the international effort to improve the global environment.”

Indoor air pollution from burning solid fuels is one of the main environmental health risk factors, and leads to about 420,000 premature deaths every year, Remais and colleagues note. The major health outcomes associated with air pollution include chronic obstructive pulmonary disease (COPD), acute lower respiratory infection and lung cancer.

Outdoor air pollution in China originates from many sources, including residential and industrial coal combustion, a growing transport sector, chemical releases from industry, outdoor burning of agricultural waste, and dust from construction, roads and deserts, the authors say. The economic cost of mortality and morbidity that results from outdoor air pollution in a typical Chinese city was about 10 percent of that city's gross domestic product in 2000, and, dependent on future technology and policies, this cost is predicted to range from 8 percent to 16 percent by 2020.

The review also notes that a high number of lakes and major rivers in China are classified as severely polluted, with only half of China's 200 major rivers and less than a quarter of its 28 major lakes and reservoirs suitable for use as drinking water after treatment.

Water pollution is especially severe in rural areas, where few drinking water and sanitation services were in place until the late 1980s and early 1990s, when China's Patriotic Health Campaign invested enormous resources in improvement of these services. However, coverage remains low, the authors say.

The past 20 years have also witnessed unregulated and increased industrial discharges and excessive use of fertilizers and pesticides in agricultural areas. Recent progress to limit industrial water pollution includes large reported reductions (60 percent to 70 percent by mass) in yearly emissions of arsenic and mercury to water, and construction of more than 60,000 industrial wastewater treatment plants.

The review, "Environmental health in China: Progress towards clean air and safe water," was published in the March 27 issue of *The Lancet*.

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