

China: Significant disparities in disease from unsafe water and sanitation, study shows

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(Medical Xpress) -- While the global community has struggled to meet the United Nation's Millennium Development Goals regarding provision of safe water and sanitation, China is rightfully held up as a model, having dramatically expanded access to both over the past few decades.

In a study published in the August edition of the *Bulletin of the World Health Organization*, researchers from Emory University reveal gaps in China's tremendous progress towards providing safe [water](#) and adequate sanitation.

Using data queried from multiple infectious disease surveillance systems, Justin V. Remais, PhD, assistant professor of environmental health at Emory's Rollins School of Public Health and colleagues at the University of Florida, the University of California-Berkeley, the Chinese Center for Disease Control and Prevention and the Chinese Academy of Sciences, provide the first estimates of the burden of disease due to unsafe water, sanitation and hygiene in China at the provincial level.

These diseases include diarrhoeal disease, helminthiasis and schistosomiasis from exposure

to contaminated soil and water, as well as vector-borne diseases that result from inadequate management of water resources, including malaria, dengue and Japanese encephalitis.

The researchers found that in 2008 approximately 327 million people in China lacked access to piped drinking water and 535 million lacked access to improved sanitation, leading to hundreds of millions of cases of diarrhoeal, parasitic and other infectious diseases. Unsafe water and [poor sanitation](#) and hygiene accounted for 62,800 deaths that year, and 2.81 million disability-adjusted life years, a measure of disease burden that includes morbidity as well as mortality.

Children under the age of 5 experienced more than 80 percent of the disease burden and the highest burden was found in inland provinces that have the lowest income per capita.

"Our estimates capture pronounced geographic and demographic variability in morbidity and mortality," says Remais.

"China's rapid economic growth has been accompanied by considerable improvement in water and sanitation infrastructure, and a reduction in poverty-associated infectious diseases. Our analysis confirmed these trends, but also highlights a substantial burden of disease that remains, and marked disparities in health outcomes."

Despite remarkable progress, the authors write, China still needs to improve infrastructure in provinces that have experienced slower economic development. Also, improved monitoring, increased regulatory oversight and more government transparency are needed to fully understand and respond to the effects of contaminated water and poor sanitation and hygiene on human health.

"Our analysis highlights the populations in greatest need of intervention," Remais says, "offering a baseline against which to assess the impact of China's future water, sanitation and hygiene improvements."

The study, 'Regional disparities in the burden of disease attributable to unsafe water and poor [sanitation](#) in China,' was supported in part by the Emory Global Health Institute.

Provided by Emory University

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