



Issue 139 March 28, 2014 | Global Burden of Disease from Household Air Pollution

In new estimates released on March 25, the World Health Organization reports that in 2012 around 7 million people died—one in eight of total global deaths—as a result of air pollution exposure. This finding more than doubles previous estimates and confirms that air pollution is now the world’s largest single environmental health risk. Resources in this issue of the WASHplus Weekly include links to fact sheets, research, and reports related to the burden of disease from household air pollution (HAP).

We also invite you to join the [Clean Cookstove Community](#) on LinkedIn which we hope will become a crowdsourcing community for sharing information and collaborating on household air pollution issues.

PRESS RELEASES

7 million Premature Deaths Annually Linked to Air Pollution, 2014. World Health Organization (WHO). [\(Link\)](#)

The WHO estimates that the joint effects of HAP and ambient air pollution were attributable to over 7 million deaths in 2012, representing one of eight total global deaths and confirming that air pollution is now the world’s largest single environmental health risk. The WHO also estimates that the South Asian and Southeast Asian and Western Pacific regions bear most of the burden with 1.69 and 1.62 million deaths, respectively. Almost 600,000 deaths occur in Africa, 200,000 in the Eastern Mediterranean region, 99,000 in Europe, and 81,000 in the Americas. The remaining 19,000 deaths occur in high income countries.

Senator Collins Introduces Clean Cookstoves Bill That Would Improve Environment, Public Health, March 10, 2014. [\(Link\)](#)

The “Clean Cookstoves Support Act,” co-sponsored by Senator Dick Durbin (D-IL), would reinforce the U.S. Government’s commitment to spur the adoption of clean cookstoves around the world. It would require the Secretary of State to work to advance the goals of the Global Alliance for Clean Cookstoves, which was formed through the leadership of Secretary of State Hillary Clinton and the United Nation’s Foundation to help create a thriving global market for clean and efficient household cooking solutions.

FACT SHEETS/BRIEFING NOTES

Household Air Pollution and Health. Fact Sheet, 2014. World Health Organization. [\(Link\)](#)

An update of WHO's estimates on the health impacts of household air pollution as well as its impact on health equity, development, and climate change. The document also includes an overview of WHO's response and how it connects to Millennium Development Goal targets.

Air Pollution Estimates: Burden of Disease from Household Air Pollution for 2012, Summary of Results. World Health Organization, March 2014. ([Link](#))

A regional and demographic statistical breakdown of the health impacts of household air pollution.

The Burden of Disease from Household Air Pollution: How and Why Are the Estimates Changing? 2014. Global Alliance for Clean Cookstoves. ([Link](#))

WHO just released its 2012 estimates of the global burden of disease from air pollution and reports that globally 4.3 million deaths were attributable to household air pollution in 2012, almost all in low and middle income countries. The new estimates make it clear that reducing air pollution could save millions of lives and further underscore the need for clean cooking technologies for the close to 3 billion people who continue to live in homes using solid fuels for cooking and heating.

PAPERS

Millions Dead: How Do We Know and What Does It Mean? Methods Used in the Comparative Risk Assessment of Household Air Pollution. *Annual Review of Public Health*, March 2014. K Smith. ([Link with supplements](#))

In the comparative risk assessment (CRA) done as part of the Global Burden of Disease project (GBD-2010), the global and regional burdens of HAP due to the use of solid cook fuels were estimated along with more than 60 other risk factors. This article describes how the HAP CRA was framed; how global HAP exposures were modeled; how diseases were judged to have sufficient evidence for inclusion; and how meta-analyses and exposure-response modeling were done to estimate relative risks.

The Effect of Biomass Fuel Exposure on the Prevalence of Asthma in Adults in India: Review of Current Evidence. *Journal of Asthma*, Mar 2014. J Trevor. ([Abstract/order info](#))

This review examines the current literature linking biomass smoke exposure to the reporting of asthma symptoms. The reviewed articles showed an increased odds ratio for reporting a diagnosis of asthma or symptoms consistent with asthma following biomass smoke exposure.

Switching to Biogas: What Effect Could It Have on Indoor Air Quality and Human Health? *Biomass and Bioenergy*, Mar 2014. S Semple. ([Abstract/order info](#))

Small household biogas digesters are now available and are likely to have the capacity to significantly reduce household concentrations of respirable particulate matter and carbon monoxide. Although no direct evidence is available, comparison with households using liquified petroleum gas suggest that improvements in indoor air quality may be of the order of 66 percent to 99 percent.

Effects of Woodsmoke Exposure on Airway Inflammation in Rural Guatemalan Women. *PLoS One*, Mar 2014. M Guarnieri. ([Link](#))

The objective of this work was to assess whether lower woodsmoke exposure from use of a stove with a chimney, compared to open fires, is associated with lower markers of airway inflammation in young women.

Biomass Fuel Use and the Exposure of Children to Particulate Air Pollution in Southern Nepal. *Environment International*, Mar 2014. D. Devakumara. ([Abstract/order info](#))

The exposure of children to air pollution in low resource settings is believed to be high because of the common use of biomass fuels for cooking. We used microenvironment sampling to estimate the respirable fraction of air pollution to which 7 to 9 year-old children in southern Nepal were exposed. The exposure of children to air pollution in rural households was much higher than particulate exposure recommendations from WHO and the National Ambient Air Quality Standards for Nepal.

Solid Fuel Use is a Major Risk Factor for Acute Coronary Syndromes Among Rural Women: A Matched Case Control Study. *Public Health*, Jan 2014. Z. Fatami, et al. ([Link](#))

Almost half of the world's population uses solid fuel for cooking, exposing women to high levels of particulate pollution in indoor air. The risk of acute coronary syndrome (ACS) was assessed among rural women, according to their use of solid fuel. Current use of solid fuel was strongly associated with ACS and risk was lowest in women who had last used solid fuel more than 15 years earlier.

Adherence to Reduced-Polluting Biomass Fuel Stoves Improves Respiratory and Sleep Symptoms in Children. *BMC Pediatrics*, 14:12, 2014. R Accinelli. ([Link](#))

Symptoms of sleep apnea are markedly increased in children exposed to smoke from biomass fuels and are reduced by kitchen stoves that improve indoor biomass pollution. However, the impact of adherence to the use of improved stoves has not been critically examined.

Improvements in respiratory and sleep-related symptoms associated with elevated indoor biomass pollution occur only following implementation and exclusive utilization of improved kitchen stoves.

An Integrated Risk Function for Estimating the Global Burden of Disease Attributable to Ambient Fine Particulate Matter Exposure. *Environmental Health Perspectives*, Feb 2014. R Burnett. ([Link](#))

The objective of this research was to develop relative risk functions over the entire global exposure range for causes of mortality in adults: ischemic heart disease, cerebrovascular disease (stroke), chronic obstructive pulmonary disease, and lung cancer.

WASHplus Weeklies will highlight topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus Knowledge Resources Specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID's Bureau for Global Health, supports healthy households and communities by creating and delivering interventions that lead to improvements in access, practice and health outcomes related to water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses at-scale, targeted as well as integrated approaches to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.

