



Issue 194 | June 5, 2015 | WASH & HAP & Child Health

This issue contains recent studies and reports on water, sanitation, and hygiene (WASH) and household air pollution (HAP) interventions and their effects on infant/child health. Included are workshop reports from the Global Alliance for Clean Cookstoves, the World Health Organization (WHO), the International Food Policy Research Institute, and others. Country reports from Bangladesh, Nigeria, and Indonesia focus on HAP child health interventions, and studies from Zanzibar, India, Afghanistan, Cambodia, and the Philippines cover WASH and child health.

HOUSEHOLD AIR POLLUTION

Demonstrating the Benefits of Clean Cooking on Child Survival, 2015. [Link to presentations](#)

In March 2015, the Global Alliance for Clean Cookstoves (GACC) convened 30 leading global public health researchers during a three-day meeting to discuss how clean cooking impacts children's health. The Child Survival Workshop, co-hosted by GACC and Johns Hopkins University, provided experts with an opportunity to exchange lessons from the field and to take a first look at early results of ongoing research evaluating the child health benefits of clean cookstoves and fuels.

Demonstrating the Benefits of Clean Cooking on Child Survival Workshop Report, 2015. [Link](#)

Preliminary findings presented at the Child Survival Workshop in Nepal show that study participants are willingly adopting new stove technologies. Women in the studies prefer to cook with cleaner stoves and fuels. When clean stoves and fuels meet cooking needs, there is little need for continued use of open fires. Studies report high rates of study compliance and solid evidence—supported by stove use monitors, which indicate when a stove is in use—that participants use the intervention stoves almost exclusively. More than 80 percent of the intervention participants in the Nigeria study gave away their kerosene stoves and now rely exclusively on their clean-burning ethanol stove to meet their daily cooking needs. Results also indicate substantial reductions in exposure associated with the adoption of cleaner cookstoves and fuels. Preliminary results indicate significant improvements in children's health indicators and outcomes, even after controlling for major covariates like changes in vaccine coverage.

Consequences of Household Air Pollution on Child Survival: Evidence from

Demographic and Health Surveys in 47 Countries. *Int J Occup Environ Health*, April 2015. L Kleimola. [Abstract](#)

The authors used Demographic and Health Surveys from 47 countries to study the risk of neonatal and child mortality in homes cooking with solid fuels or kerosene compared to clean fuels. The report concluded that kerosene should not be considered a clean fuel and that the neonatal period is a high-risk period for mortality from exposure to solid fuels and kerosene.

Household-Level Risk Factors for Influenza among Young Children in Dhaka, Bangladesh: A Case-Control Study. *Trop Med Intl Health*, March 2015. S Doshi. [Abstract/Order info](#)

Handwashing with soap was practiced infrequently and was not associated with pediatric influenza in this community. Interventions aimed at crowded households may reduce influenza incidence in young children.

Indoor Air Quality Guidelines: Household Fuel Combustion, 2014. WHO. [Link](#)

In 2012 alone, no fewer than 4.3 million children and adults died prematurely from illnesses caused by household air pollution, according to WHO estimates. These new indoor air quality guidelines for household fuel combustion aim to help public health policy makers, as well as specialists working on energy, environmental, and other issues understand best approaches to reducing household air pollution—the greatest environmental health risk in the world today.

The Effect of Solid Fuel Use on Childhood Mortality in Nigeria: Evidence from the 2013 Cross-Sectional Household Survey. *Environ Health*, Dec 2014. O Ezech. [Link](#)

Living in a rural area and low socio-economic status were strongly associated with an increased risk of a child under 5 dying due to use of solid fuels. The health effects of household use of solid fuels are a major public health threat that requires increased research and policy development efforts. Research should focus on populations in rural areas and low socio-economic households so that child survival in Nigeria can be improved.

Childhood Acute Respiratory Infections and Household Environment in an Eastern Indonesian Urban Setting. *Int J Environ Res Public Health*, Dec 2014. T Shibata. [Link](#)

This pilot study evaluated the potential effect of household environmental factors such as income, maternal characteristics, and indoor air pollution on children's respiratory status in an eastern Indonesian community. This study suggests that household incomes and mother's education have an indirect effect on childhood pneumonia and respiratory illness. The study also suggests that ambient air may dilute indoor pollution but also introduces pollution into the home from the community environment. Effective intervention programs need to be developed that consider multiple direct and indirect risk factors to protect children.

WATER, SANITATION, AND HYGIENE

Improving Maternal and Newborn Health in Zanzibar: A Needs Assessment of IPC and WASH Across Maternity Units, 2015. S Ali. [Link](#)

The needs assessment examined infection prevention control (IPC), WASH, and solid waste disposal services in maternity units in Zanzibar. The analysis focused on describing and explaining the state of WASH, IPC, and waste management with the aim of informing a phased improvement plan for quality of care within maternity units.

The Joint Effects of Water and Sanitation on Diarrhoeal Disease: A Multicountry Analysis of the Demographic and Health Surveys. *Trop Med Intl Health*. March 2015. J

Fuller. [Abstract/order info](#)

Water and sanitation interventions should be combined to maximize the number of cases of diarrheal disease prevented in children under 5. Further research should identify the sources of variability seen among countries and across time. These national surveys likely include substantial measurement error in the categorization of water and sanitation, making it difficult to interpret the roles of other pathways.

Non-Clinical Interventions for Acute Respiratory Infections and Diarrhoeal Diseases among Young Children in Developing Countries. *Trop Med Intl Health*, Feb 2015. M Seguin. [Link](#)

Public investment in sanitation and hygiene, water supply, and quality and the provision of medical equipment that detect symptoms of childhood diseases, in combination with training and education for medical workers, are effective policy strategies to reduce diarrheal diseases and acute respiratory infections. According to this analysis, more research is needed in the countries most affected by childhood diseases, and sanitation promotion at the household level seems to have a greater protective effect for small children.

Household Sanitation and Personal Hygiene Practices Are Associated with Child Stunting in Rural India: A Cross-Sectional Analysis of Surveys. *BMJ Open*, Feb 2015. J Rah. [Link](#)

Improved conditions of sanitation and hygiene practices are associated with reduced prevalence of stunting in rural India. Policies and programming aiming to address child stunting should encompass WASH interventions, thus shifting the emphasis from nutrition-specific to nutrition-sensitive programming.

Risk Factors Associated with Recurrent Diarrheal Illnesses among Children in Kabul, Afghanistan: A Prospective Cohort Study. *PLoS One*, Feb 2015. A Aluisio. [Link](#)

Maternal handwashing and improved sanitation facilities were protective and represent important prevention points among public health endeavors. The discrepancy between soap availability and use suggests barriers to access and knowledge, and programs simultaneously addressing these aspects would likely be beneficial. Enhanced maternal education and economic status were protective in the study population, and these findings support multi-sector interventions to combat illness.

Environmental Factors and WASH Practices in the Perinatal Period in Cambodia: Implications for Newborn Health. *Int. J. Environ. Res. Public Health*, Feb 2015. A Bazzano. [Link](#)

A qualitative approach was used to understand the environmental context for infection prevention and control and WASH-associated behaviors in health centers where women give birth, and in homes of newborns, in a rural Cambodian province. Structured observations and focus group discussions revealed important gaps in optimal practices, and both structural and social barriers to maintaining IPC during delivery and post-partum. Solutions to address the issues are identified, and tackling these could result in marked environmental improvement for quality of care and neonatal outcomes.

Prioritising Clean Water and Sanitation. *Lancet Infect Dis*, Feb 2015. T Burki. [Link](#)

Inadequate sanitation and hygiene is implicated in about 50 infectious diseases. Foremost of these are the diarrheal diseases, which kill 580,000 children younger than 5 years every year; nearly all of these deaths can be attributed to the ingestion of feces. But there is growing recognition that the effects of poor sanitation can greatly undermine public health in a wide-

ranging and insidious manner.

Parasitological and Nutritional Status of School-Age and Preschool-Age Children in Four Villages in Southern Leyte, Philippines: Lessons for Monitoring the Outcome of Community-Led Total Sanitation. *Acta Tropica*, Jan 2015. V Belizario Jr. [Link](#)

This study examined the parasitological and nutritional status of school-age and preschool-age children in four villages in Southern Leyte, Philippines, where two of the villages attained open defecation free status after the introduction of community-led total sanitation. To achieve effective control of soil-transmitted helminths (STH), deeper collaboration between the WASH and STH sectors are recommended where partners can work together in the area of monitoring and evaluation that may include improved parasitological and nutritional status in high-risk groups, as well as sustainable behavior change as outcome indicators.

Risk Factors for Mortality from Acute Lower Respiratory Infections (ALRI) in Children under Five Years of Age in Low and Middle-Income Countries: A Systematic Review and Meta-Analysis of Observational Studies. *PLOS One*, Jan 2015. M Sonogo [Link](#)

Low maternal educational level, low socio-economic status, and other related factors (i.e., lack of sewerage and latrines and poor quality of water) were significantly associated with ALRI mortality in this review.

Why Sanitation Matters for Nutrition, 2015. D Spears. [Link](#)

Water, sanitation, and hygiene can have a profound effect on health and nutrition. A growing base of evidence on the link between sanitation, child height, and well-being has come at an opportune time, when the issue of sanitation and nutrition in developing countries has moved to the top of the post-2015 development agenda.

WASHplus Weeklies highlight topics such as Urban WASH, Household Air Pollution, Innovation, Household Water Treatment and Storage, Handwashing, 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 multi-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 household air pollution (HAP). 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.