



## Issue 213 | Nov. 6, 2015 | World Pneumonia Day 2015

Established in 2009, World Pneumonia Day is marked every year on November 12 to: raise awareness about pneumonia; promote interventions to protect against, prevent, and treat pneumonia; and generate action to combat pneumonia. The World Pneumonia Day website states that in this year alone, an estimated 5.9 million children around the world died before reaching their fifth birthday. Of these 5.9 million deaths, pneumonia was responsible for 16 percent and diarrhea was responsible for 9 percent, making them two of the leading killers of children worldwide.

This issue contains a link to the World Pneumonia Day website, pneumonia fact sheets, and reports and studies about pneumonia, household air pollution, and handwashing/hygiene.

### EVENTS

#### **World Pneumonia Day 2015.** [Link](#)

The Global Coalition Against Child Pneumonia provides leadership for World Pneumonia Day and is comprised of more than 140 NGOs, academic institutions, government agencies, and foundations.

### FACT SHEETS

#### **Executive Summary: Global Burden of Pneumonia and Diarrhea in Children, 2015.**

International Vaccine Access Center. [Link](#)

This pneumonia and diarrhea progress report evaluates the progress of the 15 countries with the greatest burden of under-5 pneumonia and diarrhea deaths in implementing high-impact interventions outlined in the Global Action Plan for the Prevention and Control of Pneumonia and Diarrhea, where data are available, and evaluates the need to accelerate the implementation of select interventions and ensure sustainability of that progress.

#### **Pneumonia Fact Sheet, 2014.** World Health Organization (WHO). [Link](#)

The following environmental factors increase a child's susceptibility to pneumonia: indoor air pollution caused by cooking and heating with biomass fuels (such as wood or dung), living in crowded homes, and parental smoking.

#### **Pneumococcal Disease, 2014.** GAVI Alliance. [Link](#)

Every year, pneumococcal disease takes the lives of more than half a million children before

their fifth birthday. The vast majority of these deaths occur in developing countries. This brief provides an overview of prevention strategies using newly available vaccines.

## **OVERVIEW/GENERAL**

**Acting on the Call: Ending Preventable Child and Maternal Deaths**, 2015. USAID. [Link](#)  
Acting on the Call uses the Lives Saved Tool to model which high-impact interventions will yield the most significant results in terms of contribution to lives saved by 2020 on a country-by-country basis.

**Children's Health Priorities and Interventions**. *BMJ*, Sept 2015. W Were. [Link](#)

Of the estimated 6.3 million children aged under 5 years who died in 2013, more than 70 percent died in the first year of life. The leading causes of mortality were preventable newborn problems and infectious diseases—that is, preterm birth complications (15 percent), intrapartum related complications (11 percent), pneumonia (15 percent), diarrhea (9 percent), and malaria (7 percent). In addition, 45 percent of all deaths in under 5s were associated with undernutrition, and more than 80 percent of newborn deaths were associated with low birth weight.

**Ending Preventable Child Deaths from Pneumonia and Diarrhoea by 2025: The Integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD)**, 2013. WHO; UNICEF. [Link](#)

GAPPD proposes a cohesive approach to ending preventable pneumonia and diarrhea deaths. It brings together critical services and interventions to create healthy environments, promotes practices known to protect children from disease, and ensures that every child has access to proven and appropriate preventive and treatment measures.

## **WASH AND PNEUMONIA**

**Arsenic Exposure Is Associated with Pediatric Pneumonia in Rural Bangladesh: A Case Control Study**. *Env Health*, Oct 2015. C Marie George. | [Journal article](#) | [SciDev Summary](#) |

The researchers observed higher odds of pneumonia for children with creatinine adjusted urinary arsenic concentrations. This novel finding suggests that low to moderate arsenic exposure may be a risk factor for pneumonia in children under 5 years of age. Many other countries around the world are also affected by elevated levels of arsenic in groundwater sources such as India, Nepal, Vietnam, Cambodia, Mongolia, Taiwan, China, Chile, Argentina, Peru, Bolivia, Mexico, and the United States.

**Effectiveness of Non-Pharmaceutical Measures in Preventing Pediatric Influenza: A Case-Control Study**. *BMC Public Health*. June 2015. N Torner. [Link](#)

Hygiene behavior plays a relevant role in infectious disease transmission. The aim of this study was to evaluate non-pharmaceutical interventions in preventing pediatric influenza infections. Frequent handwashing should be recommended to prevent influenza infection in the community setting especially in the school age group.

**A Cost-Benefit Analysis of Early Childhood Hygiene Interventions in Uzbekistan**, 2014. R Ataniyazova. [Link](#)

This paper applies cost-benefit analysis (CBA) technique to estimate the effectiveness of hand hygiene and oral health interventions in Uzbekistan for children of kindergarten age (3–6 years old). The primary objective in this study is to apply the CBA framework to investigate

economic viability of hand hygiene and oral health interventions on respiratory diseases (influenza, bronchitis, pneumonia), intestinal diseases (diarrhea, hepatitis A, and helminthiasis), and dental caries and stomatitis. The study shows that prevention of disease through hygiene promotion is cost-effective.

**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](#)

The results of this review show a relative dearth of studies on respiratory infections (six studies) compared to those on diarrheal diseases (32 studies), with three covering both diseases. The limited knowledge base on nonclinical interventions for reducing respiratory infections is surprising given the global burden of disease and the effectiveness of some policy initiatives.

**To Study Prevalence of Mycoplasma Pneumoniae Infection in Children Less than Five Years of Age and Associated Risk Factors: A Prospective Observational Study.** *EC Paediatrics*, Aug 2015. M Choudhary. [Link](#)

This study concludes that *M. pneumoniae* plays an important role in children with lower respiratory tract infections. Other independent risk factors for pneumonia were identified, including incomplete immunization for age, low education level of mother, overcrowding, lack of exclusive breastfeeding for 6 months, malnutrition, and use of cooking fuel other than liquefied petroleum gas (LPG).

**Effect of Recent Diarrhoeal Episodes on Risk of Pneumonia in Children under the Age of 5 Years in Karachi, Pakistan.** *Int Jnl Epidem*, June 2013. S Ashraf. [Link](#)

Children under 5 years of age are at an increased risk of pneumonia following recent diarrheal illness. Public health programs that prevent diarrhea may also reduce the burden of respiratory illnesses.

## **HOUSEHOLD AIR POLLUTION (HAP)/HOUSEHOLD ENERGY**

**Cooking with Gas: How Children in the Developing World Benefit from Switching to LPG,** 2015. L Thompson. [Link](#)

There is good evidence of the link between children's exposure to solid fuels and pneumonia; many studies have looked at the relationship between the two. Several studies in the past decade found that infants born to mothers exposed to solid fuels during pregnancy had higher rates of low birth weight, still birth, and preterm birth. Very few studies have examined the impact of HAP on other child outcomes, such as neural tube defects, cleft lip, impaired cognitive function, otitis media, and asthma.

**Why Sustainable Energy Matters to Children: The Critical Importance of Sustainable Energy for Children and Future Generations,** 2015. H Strohmeier, UNICEF. [Link](#)

This advocacy paper provides analysis of the barriers that hamper children's access to sustainable energy and three examples of successful sustainable energy interventions in Bangladesh, Burundi, and Uganda. The publication concludes with policy recommendations for key stakeholders in the energy sector to address these barriers.

**Prevalence of Pneumonia and Associated Factors Among Indigenous Children in Brazil: Results from the First National Survey of Indigenous People's Health and**

**Nutrition.** *Trans Roy Soc Trop Med Hyg*, Mar 2015. M Cardoso. [Abstract](#)

The study results demonstrate that pneumonia is an important cause of illness among indigenous children throughout Brazil. The association between pneumonia and household characteristics suggests that indoor home environment is closely related to the respiratory health of indigenous children.

**Burden of Severe Pneumonia, Pneumococcal Pneumonia and Pneumonia Deaths in Indian States: Modelling Based Estimates.** *PLoS One*. June 2015. H Farooqui. [Link](#)

Our results suggest that in 2010, 3.6 million (3.3–3.9 million) episodes of severe pneumonia and 0.35 million (0.31–0.40 million) of all-cause pneumonia deaths occurred in children younger than 5 years in India.

**Household Air Pollution and Under-Five Mortality in Bangladesh (2004–2011).** *Int. J. Environ. Res. Public Health*, Oct 2015. S Naz. [Link](#)

Household air pollution is one of the leading causes of respiratory illness and deaths among children under 5 years in Bangladesh. This study investigates the association between HAP from cooking fuel and under-5 mortality using Bangladesh Demographic and Health Survey datasets over the period 2004–2011, and the extent to which this association differed by environmental and behavioral factors affecting level of exposure.

**Household Air Quality Risk Factors Associated with Childhood Pneumonia in Urban Dhaka, Bangladesh.** *Am Jnl Trop Med Hyg*, Mar 2015. P Ram. [Link](#)

Crowding, a tin roof in the living space, low socio-economic status, and male sex of the child were risk factors for pneumonia. The living space in case households was 28 percent less likely than in control households to be cross-ventilated. Particulate matter concentrations were not significantly associated with pneumonia. With increasing urbanization and supply of improved cooking fuels to urban areas, the high burden of respiratory illnesses in urban populations such as Kamalapur may be reduced by decreasing crowding and improving ventilation in living spaces.

**Incidence and Severity of Childhood Pneumonia in the First Year of Life in a South African Birth Cohort: the Drakenstein Child Health Study.** *Lancet Global Health*, Mar 2015. D M le Roux. [Link](#)

Boys had a higher incidence of pneumonia than girls, possibly because of differences in intrinsic immune or inflammatory responses or differences in lung structure or function. Maternal smoking was associated with increased pneumonia incidence; possible mechanisms include in-utero effects of maternal smoking, which reduces infants' lung growth, or postnatal exposure to tobacco smoke predisposing to respiratory infection or development of wheezing illness. Higher maternal education was significantly associated with decreased incidence of pneumonia, suggesting that maternal education can have a direct effect on child health.

**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](#)

Host and disease characteristics as well as socio-economic and environmental determinants affect the risk of death from ALRI in children. Together with the prevention and treatment of chronic diseases, interventions to modify underlying risk factors such as poverty, lack of female education, and poor environmental conditions, should be considered among the strategies to reduce ALRI mortality in children in low- and middle-income countries.

---

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](mailto: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](http://www.washplus.org) or email: [contact@washplus.org](mailto:contact@washplus.org).