

## **Issue 86 | January 25, 2013 | Focus on WASH and Maternal Health**

This issue highlights some of the latest research findings on water, sanitation, and hygiene (WASH) and maternal health. A DFID review states that hookworm infection in pregnancy is a serious cause of morbidity for women as well as a cause of fetal development problems. Sanitation can help prevent this burden. Of perhaps even greater importance is adequate access to water and hygiene as a means to ensure safe delivery. Infection and sepsis are leading causes for maternal and neonatal mortality. Ensuring accessible, affordable, reliable, and good quality water, sanitation and hygiene in clinics and communities reduces maternal mortality.

### **CONFERENCE PRESENTATIONS**

**What Has Sanitation and Hygiene Got to Do with Maternal Health?** *Global Maternal Health Conference, Arusha, Tanzania, Jan 15–17, 2013.* ([Link](#))

Researchers from the London School of Hygiene and Tropical Medicine and other organizations presented new research on the links between WASH and maternal health. Below are brief summaries of some of the presentations:

- Oona Campbell’s presentation asked the question, “What do we think and what do we actually know about the links between WASH and MDG 5?” Presenting the findings from a recent systematic review and related conceptual framework, she highlighted the many posited links and the strength of evidence for these. Although existing studies were of generally poor quality, they were consistent in reporting a strong association between maternal mortality and sanitation after adjusting for various likely confounding factors.
- Oliver Cumming presented analysis of existing Demographic and Health Surveys data in four countries (Bangladesh, India, Malawi, and Tanzania) to assess the proportion of births taking place at home and, of those, what proportion could be considered “WASH-safe.” The proportion of births taking place at home ranged from more than 80 percent in Bangladesh to 25 percent in Malawi. Of those births, the proportion estimated to be “WASH-unsafe” were very low, ranging from 19 percent in Bangladesh to just 1.5

percent in Tanzania.

- Lenka Benova presented an analysis of WASH in facility birth settings. Using Tanzania as a case study, she used existing facility survey data from the Service Provision Assessment. On average, she estimated that only 44 percent of facilities where births take place are WASH-safe, and only 24 percent of actual delivery rooms are considered adequate.
- Summaries of other presentations can be found on the [SHARE website](#).

## REPORTS/BLOG POSTS

- **Evidence Paper: Water, Sanitation and Hygiene**, 2011. DFID. ([Full text, pdf](#))  
Infection and sepsis are leading causes of maternal and neonatal mortality. Although the evidence base is currently not sufficient, it can be expected that a clean and hygienic environment facilitated by adequate sanitation and water access should contribute to lowering infection rates in mothers and newborn children.
- **Getting It Right: Improving Maternal Health through Water, Sanitation & Hygiene**. K Shordt, Simavi. ([Full-text, pdf](#))  
This report reviews published literature describing the impact of WASH on maternal health and mortality. Two studies showed significant correlations between increased access to water and sanitation and reductions in maternal mortality. Specific evidence was found related to the impact of water carrying and water and sanitation-related infections in pregnant women, and to the impact of hygiene during and after delivery. However, relatively few high quality studies were found to enable generalizations about the specific linkages between WASH on the one hand and maternal health on the other.
- **Maternal Mortality Fact Sheet**, 2012. World Health Organization. ([Full text](#))  
Maternal mortality is unacceptably high. About 800 women die from pregnancy or childbirth-related complications around the world every day. In 2010, 287,000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings and most could have been prevented.
- **Millennium Development Goal 5: Improve Maternal Health**. United Nations. ([Full text, pdf](#))  
New data show signs of progress in improving maternal health—the health of women during pregnancy and childbirth—with some countries achieving significant declines in maternal mortality ratios. But progress is still well short of the 5.5 percent annual decline needed to meet the MDG target of reducing by three-quarters the maternal mortality ratio by 2015.
- **Should Maternal Health Goals be Combined with WASH?** *New Security Beat*,

Jan 2013. L Herzer. ([Blog post](#))

“Does access to quality water and sanitation have an effect on maternal health outcomes? That was a surprising topic of discussion on day one of the second-ever Global Maternal Health Conference hosted this week in Arusha, Tanzania. Surprising because, to be honest, I did not think there would be strong disagreements over the relationship between water and sanitation (WASH) and maternal health. In my work with the Comparative Urban Studies Project, the two seem to be clearly linked.”

## JOURNAL ARTICLES

- **An Ecological Quantification of the Relationships Between Water, Sanitation and Infant, Child, and Maternal Mortality.** *Environmental Health*, Nov 2012. J

Cheng. ([Full text](#))

Researchers at the United Nations University and McMaster University analyzed data on access to safe water and adequate sanitation across 193 countries and compared safe water and sanitation rates with maternal and child deaths in those countries. Dividing the 193 countries into four tiers, they found that countries ranked in the bottom 25 percent in terms of safe water had about 4.7 more deaths per 1,000 children under five years old compared to countries in the top 25 percent tier. Relating safe water provision and maternal death rates, the paper says the odds of dying increase 42 percent from the top tier to each lower tier of countries; the corresponding odds with respect to inadequate sanitation: 48 percent.

- **Improving Quality of Care for Maternal and Newborn Health: Prospective Pilot Study of the WHO Safe Childbirth Checklist Program.** *PLoS One*, May

2012. J Spector. Harvard School of Public Health. ([Full text](#))

Most maternal deaths, stillbirths, and newborn deaths in low income countries are preventable, but simple, effective methods for improving safety in institutional births have not been devised. Checklist-based interventions aid management of complex or neglected tasks and have been shown to reduce harm in health care. The authors hypothesized that implementation of the WHO Safe Childbirth Checklist program, a novel childbirth safety program for institutional births incorporating a 29-item checklist, would improve maternal and perinatal health outcomes. The 29 essential practices, including hand hygiene and uterotonic administration, were evaluated. Introduction of checklist markedly improved delivery of essential safety practices by health workers. A future study will determine if this program can be implemented at scale and improve health outcomes.

- **Leptospirosis in Pregnancy.** *Eur J Clin Microbiol Infect Dis*, Oct 2012. G Puliyaath.

([Abstract](#))

Leptospirosis is a direct zoonotic disease caused by spirochetes. Many animals act as carriers or vectors. Human infection results from accidental contact with carrier animals or an environment contaminated with animal urine containing the organism. Epidemics of leptospirosis result from poor sanitation in urban areas and are

aggravated following natural calamities. The majority of leptospiral infections are either subclinical or result in very mild illness and patients recover without complications. Infection in pregnant women may be grave leading to severe fetal and maternal morbidity and mortality. Owing to the unusual presentation, leptospirosis in pregnancy is often misdiagnosed and under-reported. Preventive public education regarding hygiene, personal practices, source reduction, environmental sanitation, early diagnosis, and treatment of the condition are needed to avoid perinatal and maternal mortality.

Each WASHplus Weekly highlights 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](mailto:dacampbell@fhi360.org).



**About WASHplus** - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions 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).

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