



**Issue 156 | August 1, 2014 | Focus on Hand Washing**

This issue contains journal articles and reports published to date in 2014 on hand washing. Journal articles include an updated review of hand washing's health effects, an evaluation on the use of soapy water, a new Community Handwashing Guide, and an article on the Super Amma campaign in India. Reports include a review of hand washing in the perinatal period, a social media toolkit from the Global Public-Private Partnership for Handwashing, a report from the Institute of Development Studies on developing hand washing campaigns as part of community-led total sanitation programs, and others.

**EVENTS**

**What Does Sustainability Mean for Handwashing and Hygiene?** *Handwashing & Hygiene Track, Sustainability Forum, July 2014.* Overview by J Rosenbaum, USAID/WASHplus. [\(Link\)](#)

The literature on improving hand washing practice and then sustaining or maintaining the practice suggests determinants such as social norms, policy, and presence of "enabling technologies" (like tippy taps and water treatment products) are the primary factors required to sustain behaviors rather than issues around functioning hardware, community maintenance, and local governance. These technology and systems issues lie within the household domain rather than with community or government. Availability of key supplies and spare parts, and willingness to pay also factor into the equation, as does sustained maintenance of hand washing stations and water filters.

**LITERATURE REVIEWS**

**Periodic Overview of Handwashing Literature: Summary of Selected Peer-Reviewed and Grey Literature Published July – December 2013.** The Global Public-Private Partnership for Handwashing (PPPHW). [\(Link\)](#)

Twice a year, PPPHW publishes overviews of handwashing literature that provide practical guidance for implementers. This is a compilation of peer-reviewed and grey literature that were published between July through December 2013.

**2014 JOURNAL ARTICLES BY PUBLICATION DATE**

**Hygiene and Health: Systematic Review of Handwashing Practices Worldwide and Update of Health Effects.** *Trop Med Int Health, Aug 2014.* M Freeman. [\(Link\)](#)

From the 42 studies reporting hand washing prevalence the authors estimate that approximately 19 percent of the world's population washes hands with soap after contact with excreta (i.e., use of a sanitation facility or contact with children's excreta). Meta-regression of risk estimates suggests that hand washing reduces the risk of diarrheal disease by 40 percent; however, when they included an adjustment for unblinded studies, the effect estimate was reduced to 23 percent. Results show that hand washing after contact with excreta is poorly practiced globally, despite the likely positive health benefits.

**Association between Moderate-to-Severe Diarrhea in Young Children in the Global Enteric Multicenter Study (GEMS) and Types of Handwashing Materials Used by Caretakers in Mirzapur, Bangladesh.** *Am Jnl Trop Med Hyg*, July 2014. K Baker. ([Link](#))

Hand washing practices among caretakers of children under 5 years of age enrolled in the Global Enteric Multicenter Study in Mirzapur, Bangladesh, were characterized and analyzed for association with moderate-to-severe diarrhea. Soap or detergent ownership was common, yet 48 percent of case and 47.7 percent of control caretakers also used ashes for hand washing, including 36.8 percent of the wealthiest households. Contact with ash and water reduced concentrations of bacterial enteropathogens, without mechanical scrubbing. Thus, washing hands with ash is a prevalent behavior in Mirzapur and may help diminish transmission of diarrheal pathogens to children.

**Microbiological Evaluation of the Efficacy of Soapy Water to Clean Hands: A Randomized, Non-Inferiority Field Trial.** *Am Jnl Trop Med Hyg*, June 2014. N Amin. ([Abstract](#))

Researchers conducted a randomized, non-inferiority field trial in urban Dhaka, Bangladesh, among mothers to compare microbial efficacy of soapy water with bar soap and water alone. Scrubbing hands with water alone reduced thermotolerant coliforms but was less efficacious than scrubbing hands with soapy water. Soapy water is an inexpensive and microbiologically effective cleansing agent to improve hand washing among households with vulnerable children.

**Hand Contamination with Human Rhinovirus in Bangladesh.** *Jnl Med Virol*, Apr 2014. S Luby. ([Abstract](#))

As one step in developing a measure of hand contamination with respiratory viruses, this study assessed if human rhinovirus (HRV) was detectable on hands in a low income, non-temperate community where respiratory disease is a leading cause of child death. This study demonstrates in the natural setting that, at least after sneezing or nasal cleaning, hands were contaminated commonly with potentially infectious HRV. Future research could explore if HRV RNA is present consistently and is associated sufficiently with the incidence of respiratory illness in communities that it may provide a proxy measure of respiratory viral hand contamination.

**Associations Between Presence of Handwashing Stations and Soap in the Home and Diarrhoea and Respiratory Illness in Children Less than Five Years Old in Rural Western Kenya.** *Trop Med Int Health*, Apr 2014. K Kamm. ([Abstract](#))

Researchers tested whether soap presence in the home or a designated hand washing station was associated with diarrhea and acute respiratory illness in Kenya. Soap presence in the home was significantly associated with reduced diarrhea, but not ARI, in children in rural western Kenya. Whereas most households had soap in the home, almost none had a designated hand washing station, which may prevent hand washing at key times of hand contamination.

**Community Handwashing Guide: Utilizing Available Resources to Initiate a Handwashing Intervention.** *World Medical & Health Policy*, Mar 2014. MP Sandhu. ([Link](#))

In this article, the current hand washing recommendations and their applicability to hygiene interventions in developing nations were examined. The results of this review suggested that a new hand washing paradigm is needed to address the varying resources available for hand hygiene. Thus, a novel community hand washing guide was developed. This guide emphasizes the importance of increasing access to physical hand washing resources in developing communities, and can be applied to communities regardless of their socio-economic status. The community hand washing guide promotes sustainable, incremental improvements in hygiene within a community, and is a more feasible approach than previous recommendations.

**Effect of a Behaviour-Change Intervention on Handwashing with Soap in India (SuperAmma): A Cluster-Randomised Trial.** *Lancet Global Health*, Mar 2014. A Biran. ([Link](#))

The authors tested whether a scalable village-level intervention based on emotional drivers of behavior, rather than knowledge, could improve hand washing behavior in rural India. Hand washing with soap at key events was rare at baseline in both the intervention and control groups. At six weeks' follow-up, hand washing with soap at key events was more common in the intervention group than in the control group. This study shows that substantial increases in hand washing with soap can be achieved using a scalable intervention based on emotional drivers.

**Increasing Handwashing with Soap: Emotional Drivers or Social Norms?** *Lancet Global Health*, Mar 2014. E Leontsin. ([Link](#))

The authors state that although the argument for disgust as a key motivator for hand washing is intriguing, further research is needed to provide definitive evidence of its effectiveness.

**Efficacy of Moringa Oleifera Leaf Powder as a Handwashing Product: A Crossover Controlled Study Among Healthy Volunteers.** *BMC Complementary and Alternative Medicine*, 14:57 2014. B Torondel. ([Link](#))

Four grams of Moringa oleifera powder in dried and wet application had the same effect as nonmedicated soap when used for hand washing. Efficacious and available hand washing products could be useful in developing countries in controlling pathogenic organisms that are transmitted through contaminated hands.

**An Investigation of the Effects of a Hand Washing Intervention on Health Outcomes and School Absence Using a Randomised Trial in Indian Urban Communities.** *Trop Med Int Health*, Mar 2014. J Nicholson. ([Link](#))

Direct-contact hand washing interventions aimed at younger school-aged children can affect the health of the whole family. These may be scalable through public-private partnerships and classroom-based campaigns. Further work is required to understand the conditions under which health benefits are transferred and the mechanisms for transference.

**The Impact of School Water, Sanitation, and Hygiene Interventions on the Health of Younger Siblings of Pupils: A Cluster-Randomized Trial in Kenya.** *Am Jnl Public Health*. Mar 2014. R Dreibelbis. ([Link](#))

Authors examined the impact of school water, sanitation, and hygiene (WASH) interventions

on diarrhea-related outcomes among younger siblings of school-going children. In water-scarce areas, school WASH interventions that include robust water supply improvements can reduce diarrheal diseases among this group.

**Increased Hand Washing Reduces Influenza Virus Surface Contamination in Bangkok Households, 2009–2010.** *Influenza and Other Respiratory Viruses*, Jan 2014. J Levy. ([Link](#))

Within a hand-washing clinical trial, we evaluated factors associated with fomite contamination in households with an influenza-infected child. Influenza virus RNA contamination was higher in households with low absolute humidity and in control households, suggesting that hand washing reduces surface contamination.

## REPORTS

**Handwashing in the Perinatal Period: Literature Review and Synthesis of Qualitative Research Studies from Bangladesh, Indonesia, and Kenya**, 2014. P Ram. ([Link](#))

The purpose of this USAID-sponsored report is threefold: to report on a systematic review of the biomedical literature regarding hand washing in the perinatal period in low- and middle-income country contexts; to synthesize the information available from the MCHIP- and USAID-funded qualitative research studies on the motivators, barriers, and current practices of maternal hand washing behavior in the perinatal period; and to provide recommendations to practitioners seeking to develop and implement programs to promote hand washing to reduce neonatal mortality.

**Global Handwashing Day 2014: Social Media Toolkit**, 2014. Global Public-Private Partnership for Handwashing. ([Link](#))

The Global Handwashing Day social media campaign aims to create a global buzz about hand washing and to inspire increased investment in hand washing efforts globally. This toolkit provides resources for spreading the word about Global Handwashing Day on Twitter, Facebook, and blogs.

**How to Trigger for Handwashing with Soap**, 2014. J Maulit, Institute of Development Studies. ([English version](#)) | ([French version](#))

Community-led total sanitation (CLTS) provides an excellent opportunity to facilitate hand washing behavior change. The purpose of this document is to outline several practical tools that can be used as a part of CLTS to trigger realization among communities of the importance of hand washing with soap as well as eliminating open defecation.

**Disgust and Shame: Motivating Contributions to Public Goods**, 2014. R Guiteras. ([Link](#))

While inexpensive and effective practices such as chlorination and hand washing exist, interventions appealing to health benefits to motivate their use have seen only limited success. This paper measures the effect of messages appealing to negative emotions (disgust at consumption of human feces) and social pressure (shame at being seen consuming human feces) on hand washing behavior and use of and willingness to pay for water chlorination among residents of slum compounds in Dhaka, Bangladesh.

**Hygiene Under the Microscope: Microbiology in the Domestic Laundry Settings in Developed and Developing Settings: Challenges and Solutions**, 2014. C Amberg. ([Presentation](#))

Washing clothes by hand is the most common way of doing laundry in developing countries. In Asia, hand washing laundry is still common, even if people own a washing machine (to protect clothes, washing machine is considered a status symbol, etc). In developing countries powder detergent is more common than in developed countries, though liquids are a rising market. Other trends noted in this presentation are the rise of environmental concerns associated with the growing markets of developing countries.

## WEBSITES/TWITTER

- Global Public-Private Partnership for Handwashing - [Website](#) | [Twitter](#)
  - SuperAmma - [Website](#)
  - ChooseSoap - [Website](#)
  - Handwashing with Soap Toolkit - [Website](#)
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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](mailto: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](http://www.washplus.org) or email: [contact@washplus.org](mailto:contact@washplus.org).