PERIODIC OVERVIEW OF HANDWASHING LITERATURE:

Practical guidance for implementers based on selected peer-reviewed and grey literature published July – December 2013

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Purpose/Context	• PPPHW aims to publish overviews of handwashing literature twice a year that provide practical guidance for implementers. • We compiled peer-reviewed and grey literature publications (including e-publications and ahead-of-time publications) between July through December 2013. From these, we selected relevant articles which allowed for practical guidance for implementation. We excluded most publications from high income and/or medical facility based settings. This document summarizes the takeaway points for implementers. A separate pdf document includes additional details and context from the selected publications.
Authors note	• No single study is universally applicable. We strongly recommend considering the context of the study when interpreting results.

Summary of research
(July – December 2013)

What we learned about handwashing and health outcomes

- In Kenyan primary schools, improvements in WASH reduced reinfection of some soil transmitted helminths in primary school children after deworming though the magnitude of effect may be sex specific. (Freeman)
- A review of published evidence from schools worldwide showed that incorporating a WASH educational component in interventions was very effective in improving absenteeism. The benefits of handwashing appeared more pronounced in female students who had the highest absences rates and SES was an important barrier to access of handwashing materials. (Joshi and Amadi)
- Providing sanitizer to Kenyan primary schools with limited access to water improved hand cleansing after using the toilet among students and reduced rhinorrhea but hand no effect on diarrhea or respiratory prevalence. (Pickering)
- In India, a handwashing behavior change intervention targeting children less than 5 years old had notable impacts on diarrheal, ARI and eye infection prevalence, and school absences among these children. (Nicholson)
- A systematic review from community settings worldwide showed that the effectiveness of hand hygiene interventions to prevent ARI and influence transmission varies between settings, context and compliance. (Warren-Gash)
- In Nicaraguan hospitals, simple corrective measures on usage and stock of disinfectants and improved hygiene procedures reduced the incidence of neonatal over 2 years. (Lopez)

Summary of research
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What we learned about factors that affect hand washing behavior	• In Kenya, students who attended primary schools with consistent soap provision washed their hands with soap more often than students without regular soap provision. However, other notable barriers to good handwashing behavior remained (Saboori). In another trial, improved funding, maintenance and accountability improved access to handwashing materials in Kenyan primary schools but soap was not consistently available to students even if soap was in stock (Alexander). • Several qualitative studies in SE Asia and Africa, identified factors that affect handwashing behavior among mothers and caregivers of young children. In Indonesia, new mothers rarely washed hands with soap at critical times for pathogen transmission. How they washed hands varied between washing with soap, rinsing with water or doing either reactively. Each of these may have different drivers such as disgust for reactive washers or rinsers. Senior women and midwives were important influencers for child care and related behaviors and may be appropriate targets for behavior change. (Greenland) • Similarly, in Bangladesh, handwashing with soap before contact with food was poor. Lack of habit and a convenient place to wash hands while cooking or eating food were cited barriers to handwashing at these critical times. (Nizame) • In rural Zimbabwe, infants and young children were observed to ingest chicken feces and soil, which had high counts of fecal bacterial. WASH interventions do not typically address these important sources, which may undermine efforts to prevent harmful exposure to young kids. (Ngure) • In Kenya, researchers observed hand drying practices after hand washing and found them to be potentially unsafe. (Person)

Summary of research
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What we learned about behavioral theory related to handwashing	• The Integrate Behavior Model for Water, Sanitation and Hygiene (IBM-WASH) is a comprehensive framework that may be useful in guiding the development of an intervention, program or evaluation related to handwashing and other WASH behaviors. (Dreibelbis)
What we learned about handwashing measurement/ M & E approaches	• Using a multi-dimensional WASH focused indicators developed by Garriga and colleagues appears to provide a contextualized and easily interpretable measure to guide policy decisions for WASH service delivery and may be more useful than health impact indicators or the standard JMP indicators. (Garriga and Foguet)
What we learned about handwashing measurement/ M & E approaches	• Appropriate handwashing technology can be an important determinant of handwashing behavior. IBM-WASH framework can be useful tool to guide evaluation and selection of handwashing technologies; for example, in Bangladesh researchers found that low cost, durability, water storage capacity, ease of use and maintenance and quality influenced which technologies respondents preferred (Hulland). In some places, such as Cambodia, there is a need and a potential demand for dedicated handwashing stations. Such technology should improve convenience, be low cost and functional with variable water availability. (Jenkins) • Oregano essential oil added to liquid detergent improved the soap's antibacterial properties. Researchers found it reduced aerobic bacteria on hands as well as commercial antibacterial soap and was more effect than regular soap. (Rhoades)

Citations:

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