WATER AND SANITATION PROGRAM: RESEARCH BRIEF

Global Scaling Up Handwashing Project

Summary Findings from the Impact Evaluation Baseline Survey in Peru

August 2010

INTRODUCTION

In response to the preventable threats posed by poor sanitation and hygiene, the Water and Sanitation Program (WSP) launched Global Scaling Up Handwashing and Global Scaling Up Rural Sanitation1 in 2006 to improve the health and welfare outcomes for millions of poor people. Local and national governments are implementing these large-scale projects with technical support from WSP.

Handwashing with soap at critical times (such as after contact with feces and before handling food) has been shown to substantially reduce the risk of diarrhea, even when households do not have access to basic sanitation and water supply services. The handwashing project aims to test whether handwashing with soap behavior can be generated at scale and sustained among the poor and vulnerable using innovative promotional approaches.

One of the handwashing project’s global objectives is to learn about and document the long-term health and welfare impacts of the project intervention. To measure the magnitude of these impacts, the project is implementing a randomized-controlled trial impact evaluation (IE) in Peru, Senegal, Tanzania, and Vietnam—the four countries included in the project—to establish causal linkages between the intervention and key outcomes. The IE uses household surveys to gather data on characteristics of the population exposed to the intervention and to track changes in key outcomes that can be causally attributed to the intervention.

KEY FINDINGS

- Two-thirds of the households have a designated place for handwashing stocked with water and soap.
- Poorer households are less likely to have a handwashing station with soap and water or to wash hands with soap at critical junctures.
- Prevalence of diarrhea (based on caregiver reports) and anemia are high, even in wealthy households.
- Children in wealthier households or with a designated place for handwashing with soap and water showed higher levels of child growth and development.

IMPACT EVALUATION STUDY DESIGN

In Peru, the handwashing project was implemented in 788 randomly selected districts located in 104 provinces. The primary targeted population included mothers/caretakers (ages 14–49) and children (ages 5–12); a secondary audience included community-based agents such as schoolteachers, health promoters, and local leaders. The overall objective is to stimulate and sustain handwashing behavior change in 1.3 million people reached through the implementation activities.

1 For more information on WSP’s Scaling Up Rural Sanitation, see www.wsp.org/scalingupsanitation
The main components of the intervention included:

1. **Mass media communications campaigns** at the provincial level combining messages on local radio and promotional events in public spaces to promote behavior change among the primary target audience;

2. **School and community social mobilization activities** at the district level, in addition to the communication campaigns, including educational sessions and workshops, to reinforce messages among the primary target audience, and promote capacity building among the secondary target audience.

The IE baseline survey collected information from a representative sample of the population targeted by the intervention, covering 120 of 788 intervention districts located in 80 of the 104 provinces. The IE was designed to separately assess the effects of the two main intervention components noted above. In addition, it assessed the impact of the handwashing curricula implemented in primary schools. Research was conducted from May through August 2008 in a total of 3,526 households.

The project’s IE study utilized a series of data collection activities to measure impacts of the intervention including baseline, longitudinal, and post-intervention follow-up questionnaires. Variables studied during the baseline survey are summarized in Table 1. This Research Brief summarizes the main findings from a full report, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Peru*.

### KEY FINDINGS

**Handwashing with soap is reported to be a common practice, but washing hands with soap at critical junctures is significantly lower, especially among the poorer households.** Nearly all (99%) caregivers surveyed reported washing hands with soap at least once during the previous day. Nonetheless, rates of self-reported handwashing with soap at critical times, such as after using the toilet, after cleaning a child’s bottom, before preparing food, or before feeding a child, were much lower. When prompted for the occasions over the past 24 hours during which handwashing with soap took place, on average less than half of the households reported to have washed hands with soap after fecal contact (46% after using the toilet; 42% after cleaning a child’s bottom).

Two-thirds of the households (68%) reported having washed hands with soap before cooking or preparing food, but only a third did so before feeding a child. On average, households in the lowest wealth quintile were less likely to wash hands with soap at every critical juncture than those in the highest wealth quintile. For instance, only 34% of the poorest households reported handwashing with soap after using the toilet, compared to 57% in the wealthiest households.

**Water is widely available for handwashing, but having a designated place for handwashing stocked with water and soap is less likely and varies by wealth status and geographic location.** Spot-check observations of handwashing facilities were carried out in each household. Enumerators observed whether a household had a designated place for washing in the household or yard, and to observe whether or not water and soap were available at the time of observation. On average, water was available in most (87%) households, but a designated place for handwashing “fully stocked” with both water and soap, was observed in just two-thirds of the households (64%). On average, a fully stocked place for handwashing

### Findings for Handwashing and Child Health

<table>
<thead>
<tr>
<th></th>
<th>% HHs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handwashing station w/soap &amp; water</td>
<td>64.40%</td>
</tr>
<tr>
<td>Diarrhea prevalence, previous 48 hours (% children &lt;5)</td>
<td>10.00%</td>
</tr>
<tr>
<td>Diarrhea prevalence, previous 7 days (% children &lt;5)</td>
<td>18.50%</td>
</tr>
<tr>
<td>ALRI(^6) prevalence, previous 48 hours (% children &lt;5)</td>
<td>4.30%</td>
</tr>
<tr>
<td>ALRI prevalence, previous 7 days (% children &lt;5)</td>
<td>5.60%</td>
</tr>
<tr>
<td>Parasite prevalence (% HHs)(^6)</td>
<td>11.70%</td>
</tr>
<tr>
<td>Anemia(^7) (% children &lt;2)</td>
<td>74.80%</td>
</tr>
</tbody>
</table>

\(^2\) As per JMP definitions  
\(^4\) HHs: Households  
\(^5\) ALRI: Acute Respiratory Infection  
\(^6\) Parasites detected included *Giardia, Ascaris, and Blastocystis*  
\(^7\) Anemia defined as Hemoglobin <110 g/L
was least likely to be observed among the poorest households (55%) and in the mountains (62%), and most likely among the wealthiest households (73%) and in the jungle areas of the country (72%). The wealthier the household, the closer the handwashing station was to the toilet or kitchen facility.

**Caregiver reported prevalence of child diarrhea and presence of anemia is relatively high, even among the wealthiest households.** Primary caregivers were administered a child health calendar and asked about symptoms over the past fourteen days for each child under the age of five in their care. Prevalence of diarrhea was defined as presence of three or more bowel movements during a 24-hour period and soft stool, or one or more stools with blood and/or mucous. On average, 10% of children under the age of five presented diarrhea symptoms during the 48 hours prior to the survey, and 18.5% presented symptoms during the previous two weeks. Remarkably, diarrhea prevalence did not differ by wealth status—diarrhea symptoms affected children at equal levels in households among the poorest and wealthiest quintiles. However, prevalence of diarrhea varied by geographic location, with a higher prevalence noted in jungle and mountain areas than in coastal areas (13%, 11%, and 6% respectively). Hemoglobin concentrations obtained from children under the age of two shows that three-quarters (75%) of those tested presented anemia. An unexpected result was that the percentage of children suffering from anemia increased with wealth. A partial, plausible explanation could be that children in poorer households were more likely to receive iron supplements.

---

**Table 1. Survey Instruments and Variables**

<table>
<thead>
<tr>
<th>Survey instrument</th>
<th>Sample size</th>
<th>Variable collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household (HH) questionnaire</td>
<td>3,526 HHs</td>
<td>Household size, dwelling characteristics, education, income, assets, labor, handwashing behavior, access to water, sanitation and handwashing station, etc.</td>
</tr>
<tr>
<td>Health modules</td>
<td>3,526 HHs</td>
<td>Nutrition, child development, anthropometric (growth) measures, anemia, diarrhea, ALRI, mortality, etc.</td>
</tr>
<tr>
<td>Community questionnaire</td>
<td>120 districts</td>
<td>Community infrastructure, NGO/health programs, access and distance to services, natural disasters, etc.</td>
</tr>
<tr>
<td>Structured observations</td>
<td>Subsample of 160 HHs</td>
<td>Direct observation of handwashing behavior.</td>
</tr>
<tr>
<td>Water and stool samples</td>
<td>Subsample of 160 HHs</td>
<td>Escherichia coli (E. coli) presence in hand rinses, toy, and drinking water; parasite (Giardia, Ascaris, and Blastocystis) prevalence in children's feces.</td>
</tr>
</tbody>
</table>

Data collected for the IE baseline survey in Peru included the collection of blood samples to test for anemia (left) and measuring and recording weight, height, and arm and head circumference of children to assess nutritional status (right).
Related readings

Acknowledgments
The authors would like to thank the project’s Global Task Team Leader, Eduardo Perez, the project’s Global IE Team led by Bertha Briceno, and the country team in Peru, including Rocio Florez, Doris Alfaro, and Carlos Augusto Claux, for their inputs. The baseline survey was conducted by Imasen S.A.C. in consortium with the Instituto de Investigacion Nutricional. A cadre of survey and health enumerators carried out the fieldwork. Photographs courtesy Alexandra Orsola-Vidal.

About the program
Global Scaling Up Handwashing is a Water and Sanitation (WSP) project focused on applying innovative behavior change approaches to improve handwashing with soap behavior among women of reproductive age (ages 15–49) and primary school-age children (ages 5–9). Local and national governments are implementing the project in four countries (Peru, Senegal, Tanzania, and Vietnam) with technical support from WSP. For more information, please visit www.wsp.org/scalinguphandwashing.

Contact us
For more information please visit www.wsp.org or contact Alexandra Orsola-Vidal at wsp@worldbank.org.

Children in wealthier households or those with a designated place for handwashing with soap and water showed higher levels of child growth and development. All children under five years of age were weighed and measured during household visits and anthropometric Z-scores computed based on the WHO reference population median and standard deviation. Additionally, an index of child development was created for specific skills for age, including communication, social-personal, and gross motor skills for all children under two years of age. On average, children from wealthier households or with a designated place for handwashing stocked with water and soap had higher Z-scores for all child growth measures (weight-for-height, height-for-age, body mass index, weight-for-length, arm circumference-for-age, head circumference-for-age), indicating better nutritional status. Similarly, a higher degree of child development for every type of skill (communication, social-personal, and gross motor skills) was systematically observed in children living in households with higher levels of wealth or with a handwashing place with water and soap.

NEXT STEPS
The findings presented here provide a snapshot of baseline characteristics of the target population of the impact evaluation in regards to mothers’ and other caretakers’ handwashing behavior, presence of handwashing facilities, and key child health and development indicators.

In addition to providing useful information for the ongoing design of the handwashing project, the baseline data will be used to track changes in handwashing with soap behavior in Peru and to evaluate the project’s impact on child health and caretaker productivity. WSP hopes that learnings from the evaluation study will be used to guide future projects and policy in Peru and globally.

Post-intervention data collection has now been concluded in all districts. Data analysis and impact assessments are being conducted and a full impact evaluation report will be available soon thereafter.

—by Alexandra Orsola-Vidal and Sebastian Galiani