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 Sanitation 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
- Less than one-third of households have a designated place for handwashing with soap and water.
- Handwashing with soap at critical junctures is not common, and poorer households are half as likely to wash hands with soap as wealthier households.
- One out of 10 children presented diarrhea symptoms in the week preceding the survey, based on caregiver reports; the large majority of children suffered from anemia.
- More than 10% of children are underweight or have stunted growth.
- Children in wealthier households or with a designated place for handwashing with soap and water show a higher degree of communication, social-personal, and gross motor skills.

IMPACT EVALUATION STUDY DESIGN
In Senegal, the handwashing initiative started in 2003, when the Public-Private Partnership for Handwashing with Soap (PPPHW) was created with technical assistance from WSP. A first set of activities began in 2004 and culminated in 2007 with a 10-month communications campaign. A second phase was initiated in 2008 through WSP’s Global Scaling Up Handwashing Project and activities were expanded to eight of the country’s then 11 regions with the objective of reaching over 1.5 million mothers with children under the age of five. The overall objective was to improve the handwashing with soap
practices of over 500,000 mothers and children. The primary target population included mothers/caretakers (ages 14 to 49) and children up to 13 years of age living in urban and rural areas.

The intervention included three main components:

- **Mass media communications campaigns** aired at the national and local level to reach large numbers of the target population using television, radio broadcast, and mid-sized billboards.
- **Promotional events** in public spaces, directed to engage and interact with caregivers and children to stimulate handwashing behavior, including road shows, dramas, games, and street parades.
- **Interpersonal communication activities** conducted one-on-one at the household level to convince caregivers to set up designated areas for handwashing with soap and water and influence other handwashing determinants such as beliefs or skills.

The IE baseline survey collected information from a representative sample of the population targeted by the intervention, covering a total of 110 clusters within 88 communities. The IE was designed to assess the combined effects of the three intervention components noted above. Research was conducted from June through August 2009 in a total 1,550 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. Table 1 summarizes the variables studied during the baseline survey. This Research Brief summarizes the main findings from a full report, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Senegal.*

**KEY FINDINGS**

**Less than one-third of households surveyed have a designated place for handwashing with soap and water.** 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 whether or not water and soap were available at the time of observation. On average, a designated place for handwashing “fully stocked” with both water and soap, was observed in only 32% of the households. Poor households were more than four times less likely to have a place for washing hands with soap and water than wealthier households. Thus, on average, only 12% of the households in the poorest quintile had a designated handwashing place with soap and water, compared to 56% in the wealthiest quintiles. And, as per regional differences, a place for handwashing with soap and water was least likely to be observed in Kaolack (34%) and most likely in Saint Louis (38%). The wealthier the household, the closer the handwashing station was to the toilet or kitchen facility.

**Washing with soap at critical junctures is not common, and poorer households are half as likely to wash hands with soap as wealthier households.** Nearly all (97%) caregivers surveyed reported handwashing with soap at least once during the previous day. Nonetheless, rates of self-reported handwashing with soap at critical times are much lower. When prompted for the occasions over the past 24 hours during which handwashing with soap took place, on average only one-fifth of the households reported to have washed hands with soap after fecal contact (20% after using the toilet; 14% after cleaning a child’s bottom). Similarly, only 12% of the households reported having washed hands with soap before cooking or preparing food, and as few as 5% did so before feeding a child. On average, households among the lowest wealth quintile were at least 50% less likely to wash hands with soap than those in the wealthiest quintile after using the toilet (26% compared to 49%), after cleaning child’s bottom (8% compared to 19%), or before feeding a child.

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five years of age were weighed and measured during household visits and anthropometric Z-scores were 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. Over 10% of the children measured were underweight or had stunted growth. While children in wealthier households showed lower rates of stunting, there is no clear pattern between underweight and wealth levels. However, children from households with a designated place for handwashing stocked with water and soap had higher Z-scores for weight-for-height, height-for-age, body mass index, weight-for-length, and arm-circumference-for-age, indicating better nutritional status (head circumference-for-age was the only exemption, as scores among the two sets of households were almost the same). Similarly, a higher degree of child development for every type of skill was systematically observed in children living in households with a handwashing place with water and soap. While households among the highest wealth quintile had a higher degree of development, the pattern for the 2nd, 3rd, and 4th wealth quintiles was unclear.

**Next Steps**

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

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**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>1,550 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>1,600 HHs</td>
<td>Nutrition, child development, anthropometric (growth) measures, anemia, diarrhea, ALRI, mortality, etc.</td>
</tr>
<tr>
<td>Community questionnaire</td>
<td>110 clusters</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 109 HHs</td>
<td>Direct observation of handwashing behavior.</td>
</tr>
<tr>
<td>Stool samples</td>
<td>Subsample of 99 HHs</td>
<td>Parasite (Giardia and Cryptosporidium) prevalence in child’s feces.</td>
</tr>
</tbody>
</table>

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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 Senegal 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 Senegal and globally.

—by Alexandra Orsola-Vidal

Related reading

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About the program
Global Scaling Up Handwashing is a Water and Sanitation Program (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
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Data collected for the IE baseline survey in Senegal included the collection of blood samples to test for anemia (left) and samples of children stool to determine prevalence of parasites (right).

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