BOTTLENECK ANALYSIS OF HAND HYGIENE PROGRAMMING

A Focus on Technical and Operational Issues Preventing Scale-Up in Rural Areas of India

October 2022
SPECIFIC OBJECTIVES

- Analyse the enabling environment for hand hygiene programmes and identify critical bottleneck/gaps in the hand hygiene behaviour universalization.

- Assess community and key stakeholders’ (e.g., government departments, frontline workers) awareness, knowledge, attitudes and practices regarding hand washing (HW) with soap and water.

- Identify community-level motivating and restraining factors, and the influence of external factors on hand washing practices.

- Assess the availability, adequacy and functionality of recently set up hand washing infrastructure from gender, child-friendliness and sustainability perspectives, and soap availability in households, institutions and public places.

- Review the quantity, type, and quality of products available on the market, and identify steps for an increased availability of affordable, low-maintenance and sustainable products.

- Assess manufacturer and retailer perspectives on hand washing, user requirements, and required interventions to promote HW infrastructure production, and encourage more of them to enter this space.

- Assess the extent to which technology is available, affordable, and improving to meet community demand and aspirations.

- Identify and document best practices or case studies on hand hygiene behaviours in different settings, covering both infrastructure and design creation, and operation and maintenance (O&M) arrangements.
STUDY AREA

Nashik
- Torangan
- Shiragaon
- Chandshi
- Modale
- Pimprale

Palghar
- Washala
- Dalhara
- Shelivali
- Dadade
- Poman

Chittoor
- Chandragiri
- Venkatapuram
- Diguvasapalle
- Venuthanapalle
- Jandla

Krishna
- Chandragiri
- Chintalavalli
- Maddipatla
- Ayyanki
- Gullapudi

Barpeta
- Patbashi
- Hathinapur
- Madhya Paschim Sarakhetri
- Bahari
- Pub Kathal Muri

Udalguri
- Khoirabari
- Alagiri
- Hatigarh
- Ekabrai
- Kacharison

Puruliya
- Jitujury
- Ramnagar High School
- Durku
- Chattuhsana
- Gurur

South 24 Parganas
- Jeteshrampur
- Bhogali II
- North Bawali
- Poleghat
- Futigoda

PERIOD OF STUDY
The period of study was December 2021–January 2022.

SAMPLE SIZE

<table>
<thead>
<tr>
<th>Quantitative samples</th>
<th>Qualitative samples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household</strong> 1,516</td>
<td><strong>Key GP Functionaries</strong> 20</td>
</tr>
<tr>
<td><strong>School</strong> 66</td>
<td><strong>Local Technician</strong> 10</td>
</tr>
<tr>
<td><strong>Anganwadi Centres (AWCs)</strong> 56</td>
<td><strong>Frontline Workers</strong> 30</td>
</tr>
<tr>
<td><strong>Health Facility</strong> 27</td>
<td><strong>Local Fabricator</strong> 5</td>
</tr>
<tr>
<td><strong>Govt/GP Office</strong> 58</td>
<td><strong>School Teachers</strong> 10</td>
</tr>
<tr>
<td><strong>Public Places</strong> 33</td>
<td><strong>Representative of ITI</strong> 5</td>
</tr>
<tr>
<td><strong>Food Stall</strong> 69</td>
<td><strong>Shopkeepers/Suppliers/Distributors</strong> 10</td>
</tr>
<tr>
<td><strong>Government Officials</strong> 85</td>
<td><strong>CSR Donors/CSO</strong> 5</td>
</tr>
</tbody>
</table>
FINDINGS FROM HOUSEHOLD SURVEY

Access to basic hand washing facility

Access to basic hand washing facility (in %)  
N=1516

<table>
<thead>
<tr>
<th></th>
<th>Low FHTC* coverage districts</th>
<th>High FHTC coverage districts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>72</td>
<td>80</td>
<td>76</td>
</tr>
</tbody>
</table>

* Functional Household Tap Connection

Predictors of having a basic hand washing facility

- Higher education
- Adequate water supply
- Sanitation facility
- Hand washing infrastructure
- Receiving messages on hand washing
- Higher coverage of FHTC

Access to main water source

Access to main water source (in %)  
N=1516

- Piped water: 38%
- Public tap/pipe: 13%
- Tubewell: 16%
- Unimproved source: 12%
- Others: 2%

Types of hand washing facilities in households (in %)  
N=1516

- Washbasin with stored/running water: 52%
- Tube well: 18%
- Fixed place in the premises with stored water in buckets/mugs/etc: 16%
- No arrangements: 12%
- Other arrangements: 2%

Location of main water source (in %)  
N=1516

- Own dwelling: 30%
- Within the premises: 23%
- Located elsewhere: 47%

89% of the households had access to improved water source.
Drainage system at the place of hand washing

Access to hand washing materials

Knowledge on the aspects of hand hygiene

91% HH respondents knew that washing hands with soap reduces the chance of transmission of many diseases.

15% HH respondents did not know a single step of handwashing with soap (HWWS) whereas 30% knew all the correct steps of HWWS.
Knowledge on critical times of hand washing with soap (in %)

N=1516

Practice of hand washing with soap

Distribution of hand washing substance used for hand washing at critical times in the last 24 hours (in %)

Substance used for hand washing at critical times (%)

- Water only
- Soap and water
- Hand sanitizer
- Ash/mud/sand
The gap between HWWS knowledge and practice indices was positively associated with higher educational levels, was higher for females and lower for younger population.

Aspiration related to hand washing facility

Average cost of building hand washing infrastructure (in INR)

- Wash basin with running water: 14,488
- Tap water without basin: 7,938
- Wash basin with stored water: 8,714
- Tube well: 6,500
- Fixed place with traditional handwashes: 3390
- Others: 2,560
- Total: 27,989
46% of HHs with no arrangement of hand washing facility wanted to construct a hand washing facility.

Perceived cost of HH members having no hand washing facility was much higher than the actual mean cost as reported by HH members who constructed hand washing facility in the last one year.
HAND WASHING INFRASTRUCTURE IN PUBLIC PLACES, PUBLIC INSTITUTIONS AND FOOD STALLS

Arrangement for hand washing

Percentage distribution of hand washing arrangement in public institutions, public places and food stalls (in %)

<table>
<thead>
<tr>
<th>Types of hand washing arrangement (%)</th>
<th>No arrangement (%)</th>
<th>Hand washing station/basin (%)</th>
<th>Bucket/mug/jug etc. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public institutions</td>
<td>16</td>
<td>71</td>
<td>23</td>
</tr>
<tr>
<td>School</td>
<td>11</td>
<td>83</td>
<td>48</td>
</tr>
<tr>
<td>Anganwadi Centres</td>
<td>29</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>Health Facility</td>
<td>11</td>
<td>67</td>
<td>22</td>
</tr>
<tr>
<td>Govt/GP Offices</td>
<td>12</td>
<td>79</td>
<td>9</td>
</tr>
<tr>
<td>Public places markets etc.)</td>
<td>61</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Food Stall</td>
<td>25</td>
<td>58</td>
<td>17</td>
</tr>
</tbody>
</table>

Availability of running water

<table>
<thead>
<tr>
<th>Public Institution</th>
<th>School</th>
<th>Anganwadi Centres</th>
<th>Health Facility</th>
<th>Govt/GP Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>96%</td>
<td>78%</td>
<td>72%</td>
<td>96%</td>
</tr>
</tbody>
</table>

Functionality of the hand washing basins/stations

Distribution of functionality of hand washing basin/station in public institutions, public places and food stalls (in %)

<table>
<thead>
<tr>
<th>Functionality of hand washing basins/stations (%)</th>
<th>None functional</th>
<th>Few functional</th>
<th>All functional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public institution</td>
<td>73</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Public Places (markets etc.)</td>
<td>62</td>
<td>25</td>
<td>13</td>
</tr>
</tbody>
</table>
Availability of hand washing material

Distribution of availability of hand washing material (soap or alcohol-based hand sanitizer) in public institutions, public places and food stalls (in %)

<table>
<thead>
<tr>
<th>Availability of hand washing material (%)</th>
<th>Public Places (markets etc.)</th>
<th>Food Stall</th>
<th>Anganwadi Centres</th>
<th>School</th>
<th>Public Institution</th>
<th>Govt/GP Office</th>
<th>Health Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>18</td>
<td>22</td>
<td>50</td>
<td>56</td>
<td>57</td>
<td>60</td>
<td>67</td>
</tr>
</tbody>
</table>

Drainage of hand washing facilities

Distribution of drainage system in public institutions, public places and food stalls (in %)

<table>
<thead>
<tr>
<th>Types of drainage system</th>
<th>Public institutions</th>
<th>School</th>
<th>Anganwadi Centres</th>
<th>Health Facility</th>
<th>Govt/GP Offices</th>
<th>Public Places markets etc.)</th>
<th>Food Stall</th>
</tr>
</thead>
<tbody>
<tr>
<td>No drainage (%)</td>
<td>20</td>
<td>17</td>
<td>18</td>
<td>22</td>
<td>19</td>
<td>12</td>
<td>50</td>
</tr>
<tr>
<td>Open drain (%)</td>
<td>43</td>
<td>52</td>
<td>34</td>
<td>30</td>
<td>46</td>
<td>21</td>
<td>38</td>
</tr>
<tr>
<td>Covered drain (%)</td>
<td>20</td>
<td>12</td>
<td>12</td>
<td>30</td>
<td>19</td>
<td>58</td>
<td>50</td>
</tr>
<tr>
<td>Connected to soak pit/sewer (%)</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>19</td>
<td>19</td>
<td>12</td>
<td>69</td>
</tr>
</tbody>
</table>
**STATUS OF INFORMATION EDUCATION COMMUNICATION (IEC) / SOCIAL AND BEHAVIOUR CHANGE COMMUNICATION (SBCC) ACTIVITIES**

<table>
<thead>
<tr>
<th>Activities undertaken by GP to promote hand hygiene (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities undertaken by GP representatives (%)</td>
</tr>
<tr>
<td>Small group meetings</td>
</tr>
<tr>
<td>Banners/posters/wall paintings</td>
</tr>
<tr>
<td>Miking</td>
</tr>
<tr>
<td>Sanitize ASHA/AWW/SHG</td>
</tr>
<tr>
<td>Home visits</td>
</tr>
<tr>
<td>Rally</td>
</tr>
</tbody>
</table>

**Messages:** The major content of the IEC materials on hand hygiene was COVID centric and revolved around the benefits of hand washing, steps of hand washing and critical times of hand washing. However, most of these do not put emphasis on the importance of drying hands or the grey water management. Among the numerous messages received by the respondents.

- **85%** of the HH respondents thought hand washing reduces the chance of COVID-19
- **70%** of the HH respondents thought hand washing reduces the chance of other diseases
- **61%** of the HH respondents thought hand sanitizer could reduce COVID-19

**Communication reach out**

- Nearly 91% of the HH respondents were benefitted (55% - a lot and 36% - to some extent) by this
- 70% of the HH respondents had received some messages on hand hygiene in last six months before the survey
- 63% of the HH respondents thought that home visit by ASHA/ANM/AWW and television/radios are most effective

**Availability of IEC materials on hand hygiene near the place of hand washing**

<table>
<thead>
<tr>
<th>Public Institution</th>
<th>School</th>
<th>Anganwadi Centres</th>
<th>Health Facility</th>
<th>Govt/GP Office</th>
<th>Public Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>47%</td>
<td>29%</td>
<td>54%</td>
<td>37%</td>
<td>0%</td>
</tr>
</tbody>
</table>
FINDINGS FROM THE QUALITATIVE SURVEY

None of the departments of PHED, WCD, Health & FW, P&RD, or Education had any budgeted activities specifically for promoting hand hygiene. However, three-fifths of the GPs have budgeted for hand hygiene in their GPD. P.

According to the FLWs, the Anganwadi centres require prompt upgradation as the majority of them lack even the basic hand washing infrastructure, including adequate water supply for the children.

“"The annual school grant is too little to construct new hand washing or drinking water facilities as a minimum amount of around INR 13,500 will be required for construction. Most of that amount is spent on maintenance itself. Also, schools with no boundaries face frequent theft of taps or motors installed in them, discouraging their installation.

– Mission Director, Sarba Shiksha Abhiyan, Assam"

“"Water supply is a major issue. Even though connections have been installed in some households, including mine, supply is limited to one hour or is unavailable for days. Carrying buckets of water for hand washing is difficult.

– ASHA worker, Palghar, Maharashtra"

“"It is our responsibility to observe and ensure that students follow the hand washing protocols. The teacher’s responsibility does not end at teaching. We have to follow up and monitor their behaviour at all times to ensure behavioural changes that are beneficial to them and their family members.

– School teacher, Rayagada district, Odisha"

“"There are no obstacles to building hand washing stations in public places but villagers neglect or misuse them. They throw garbage, steal parts or use them to play games. This theft of taps and frequent destruction of the hand washing stations turn out to be exasperating for us, and we cannot always repair or replace them owing to limited money.

– GP Representative, Purulia, West Bengal"

“"Most of the food stall vendors do not practice proper hand hygiene. In fact, many of these stalls only have water stored in a dirty bucket and a mug for the customers. After COVID-19, a few of them offered hand sanitizers, but now all these have been lifted. Even the practice of safe hand washing among the customers was not satisfactory.”

– Swachhagrahi, Krishna, Andhra Pradesh"
**Recommendations on policy level interventions by the Ministry of Panchayati Raj, GOI**

- Ministry of Panchayati Raj (MOPR) may become the nodal department for coordinating all activities related to hand hygiene in order to achieve the SDG goals related to hand hygiene. The proposed specific interventions are:
  - To issue an advisory on (i) clarifying/allowing use of 15th FC tied funds for installation and O&M of hand washing stations in institutions & public places by Panchayats, (ii) due focus under GPDP on creating hand washing facilities in all public institutions & public places out of 15th FC tied fund from 2023/24 onward
  - MOPR may advise all GPs through the state governments to conduct an annual survey of availability of hand washing facilities in households and institutions, as well as to develop a MIS to track progress

**Recommendations on policy level interventions by other Ministries of the GOI**

- **Jal Shakti**: (i) To expedite piped water connection to institutions and public places, (ii) to extend support in training Swachhgrahis, frontline workers and plumbers, (iii) to join other departments in building awareness on hand washing with soap, water conservation and loss reduction, soak pit construction and rain water harvesting by the households, (iv) to promote use of taps with aerators while providing FHTC under JJM.

- **Rural Development**: (i) Provision of basic hand washing facility (a basin & storage) in all PMAY houses, (ii) NRLM/SRLM may consider promotion of hand washing with soap and water by SHG members
H&FW, WCD and Education: To support the construction and O&M of hand washing stations in health centres, AWCs and the respectively schools through their flagship programmes

Recommendations for state governments

- To identify a nodal department for promoting hand washing with soap and water and other hygiene-related activities
- Panchayat department to make legal provision for empowering GPs to watch and enforce hand hygiene in public eateries
- Health and Family Welfare (H&FW), Education and WCD Departments to make budgetary provision for O&M of hand washing facilities at rural health centres, schools and AWCs respectively, and consider devolving the funds to the GPs

Recommendations on IEC to promote hand washing with soap and water

- Redesigning the messages on the need for hand hygiene by shifting the focus from the threat of COVID-19 to public health improvement, critical times and steps of hand washing, with a focus on reducing the gap between knowledge & practice
- Messages to cover the construction costs of various hand washing stations, use of tap with aerator, and managing grey water
- To display messages on hand washing with soap & water in every institution and hand washing station at public places and eateries
- To focus on SBCC through home visits, with a priority on covering households not having a basic hand washing facility. Triggering action by households that do not have a hand washing arrangement to set up a basic hand washing facility in their premises with stored water in a bucket at a fixed location, as well as a platform and a soak pit
- Panchayat department to issue advisory on (i) having a costed IEC plan for promotion of hand washing with soap and water (and other WASH activities) for each GP & ZP and (ii) observing global hand washing day in every GP
**Recommendations on building capacity**

- Panchayat department of the state to build capacity of the GPs on (i) promotion of hand washing with soap and water, (ii) O&M of all public and institutional hand washing facility, (iii) monitoring access to basic hand washing facility, (iv) enforcing hand hygiene in public eateries, (v) ability to plan and implement schemes for having hand washing station along with grey water management in every institution and public place under GPDP.

- Training of existing non-certified plumbers through ITIs/NGOs to improve their skills; each Zilla Parishad may plan for this with support from the state government.

**Recommendations on partnership**

- Partnership between the government and NGOs in building GP capacity and community awareness.

- Partnership with SHGs at the GP level to deliver messages about hand washing with soap and water to their households and neighbourhood, as well as their involvement in O&M of hand washing stations (other WASH facilities).

**Best practice**

Daily Hand washing for an Ailment-free Life (DHaAL) was a joint initiative of Assam SSA, Centre for Environmental Education, and UNICEF to promote hand hygiene and the O&M of the school hand washing facilities. 2000 SMC members, over 4000 mothers’ group members and 20,000 students were oriented on WASH issues, with a special focus on hand washing with soap. It led to a 92 per cent increase in soap availability in schools. This programme was later scaled up to 26,800 elementary schools. Mothers’ groups played significant roles in encouraging fellow guardians to donate two soaps to schools on their child’s birthday or other occasions. They also actively participated in the daily monitoring of the availability of soap and water for hand washing in the schools.