World Vision

Evidence Summary for Handwashing

TABLE OF CONTENTS

EVIDENCE AND EXPERIENCE

SDG target 6.2

SDG target 6.2
By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

6 CLEAN WATER AND SANITATION

HEALTH EVIDENCE

Handwashing with soap is critical to achieving Sustainable Development Goal (SDG) 6.2. It is a key public health practice that can help prevent the spread of diarrheal and respiratory diseases. Diarrhea is the second-leading cause of death in children younger than 5, killing 480,000 children in this age group each year.[1]

Proper handwashing with soap can reduce the risk of diarrheal disease by up to 48% and reduce the risk of lower respiratory infections by 23%.[2] However, 3 billion people around the world are living without access to soap and water for handwashing. Even those with access report low utilization of handwashing facilities, with only 19% of people worldwide washing their hands after defecation.[3] Increasing access to hygiene infrastructure, combined with effective behavior-change programming, are key to successfully increase proper handwashing.

In 2017, World Vision and the Water Institute at the University of North Carolina conducted an evaluation of World Vision's water, sanitation, and hygiene (WASH) programs in 14 countries.[4] One objective of the evaluation was to assess the status of household WASH service access. In seven countries, households in World Vision program areas were significantly more likely to have access to handwashing facilities with soap and water than households in comparison areas. However, an average of only 10% of households had access to these facilities across all 14 countries. While World Vision's WASH interventions have made an impact, global handwashing rates are still unacceptably low.

World Vision's current WASH Business Plan for fiscal years 2021 to 2025 targets 18 million people gaining access to improved hygiene through household handwashing stations, 15,916 schools gaining access to basic handwashing facilities reaching more than 5 million schoolchildren, and 3,347 healthcare facilities gaining access to basic handwashing facilities.[5]

1 Jamie Perin et al.,"Global, Regional, and National Causes of Under-5 Mortality in 2000–19: An Updated Systematic Analysis With Implications for the Sustainable Development Goals," *The Lancet Child & Adolescent Health*, Volume 6, Issue 2, 2022, p.106–115, https://doi.org/10.1016/S2352-4642(21)00311-4.

2 Sian White et al., "The Determinants of Handwashing Behaviour in Domestic Settings: An Integrative Systematic Review," *International Journal of Hygiene and Environmental Health*, Volume 227, 2020, https://doi.org/10.1016/j.ijheh.2020.113512.

3 WaterAid Australia, "4 out of 5 people worldwide do not wash their hands after going to the toilet," 2018, https://www.wateraid.org/au/articles/4-out-of-5-people-worldwide-do-not-wash-their-hands-after-going-to-the-toilet#:~:text=Even%20though%20handwashing%20is%20a.

4 The Water Institute at the University of North Carolina, *The World Vision 14-Country Evaluation Final Report*, 2020, https://app.box.com/s/9241t51d8s37ija92g5todgxy8rcwxb7.

5 World Vision, *Our Roadmap to Impact 2021–2025: Global Water, Sanitation, and Hygiene Business Plan*, 2020, https://s3.us-east-2.amazonaws.com/wvusstatic.com/2021/landing-pages/our-work/clean-water/Executive+Business+Plan-+digital+layout0221.pdf.

Business Plan goals:

1. **ACCELERATE** universal and equitable access to water, sanitation, and hygiene services

2. **DEEPEN** focus on the most vulnerable people, especially in fragile contexts

3. **DEMONSTRATE** sustainable impact

4. **LEVERAGE** $1 billion business plan to mobilize financing for WASH services

WORLD VISION'S EXPERIENCE

World Vision has made great strides in hygiene promotion and access. Over the last seven years (2016 to 2022), World Vision reached 31.7 million people with hygiene promotion activities.[6] The following are examples of approaches that have been evaluated.

❯ Piped water
Zambia

Since handwashing at its simplest requires soap and water, providing these more conveniently is thought to drive increased handwashing with soap. In 2018, World Vision constructed piped-water systems in 14 villages in Zambia's Southern Province.

Two of these systems were chosen for inclusion in a study that evaluated World Vision's piped-water systems. Examining piped water systems across four rural villages (two from World Vision projects and two from nearby comparison villages), the study found that having water closer to the home increases handwashing rates. The study showed that when the distance from the water source to the home was reduced by 90%, hand contamination fell 68%. Providing reliable piped-water service allowed for more water to be readily available, meaning more water could be allocated for handwashing.[7]

❯ WASH UP!
Zambia

WASH UP! is a school-based approach bringing together both behavior-change messaging and improved infrastructure. In partnership with Sesame Workshop, WASH UP! promotes improved WASH behaviors in schoolchildren. The program includes a multimedia program of up to 12 sessions that features a Sesame Muppet character named Raya, an empowered girl figure who promotes clean water, sanitation, and hygiene.

One key insight from the Zambia study is that well-functioning WASH infrastructure is essential, but not sufficient on its own, to ensure improved WASH behaviors. In the control group provided with a handwashing station but no educational reinforcement, even when water and soap were available, initial handwashing achievements diminished over time. This finding underscored the interdependency of education, motivation, and providing an enabling environment for meaningful, lasting behavior change.

❯ Nurturing Care Groups (NCGs)
Ghana

NCG programs use facilitators, often NGO staff or health extension workers, to train community-based volunteers (leader mothers) to become change agents in their communities. Leader mothers share behavior-change messages with other mothers to promote desired behaviors and shift social norms. The mothers then bring these messages to small groups in their neighborhoods. Messages are developed based on formative research approaches to target key behavioral determinants with high frequency and coverage. NCGs can be implemented in fragile contexts and with mobile populations. This approach has been shown to double the behavioral change of other behavior-change platforms, and often exceeds 90% WASH behavior adoption.[8]

In Ghana, World Vision's NCG pilot reached 9,326 households and increased access to basic handwashing facilities by 52 percentage points. In addition, the proportion of parents/caregivers reporting handwashing with soap at appropriate times (e.g., after defecation) increased by 24 percentage points, and the proportion of caregivers who reported washing their hands after attending to a child who had defecated also increased by 44 percentage points by the end of the project.

---

6 World Vision, *Capacity Statement: Global Water, Sanitation, and Hygiene Program*, 2023, https://www.wvi.org/publications/capacity-statement/water-sanitation-and-hygiene/global-wash-capacity-statement.

7 James C. Winter et al., "The Impact of On-Premises Piped Water Supply on Fecal Contamination Pathways in Rural Zambia," *npj Clean Water*, 4, 2021, p. 1-8, https://www.nature.com/articles/s41545-021-00138-x.

8 World Vision International, "Nurturing Care Groups," https://www.wvi.org/health/nurturing-care-groups.

KEY BEHAVIOR CHANGE APPROACHES

Historically, implementers have primarily tried to improve rates of handwashing by educating individuals about disease transmission. But a recent systematic review documented that even when people had high levels of knowledge about disease transmission, handwashing still remained rare.[9] Knowledge may not be sufficient, or even necessary, to influence handwashing behavior in the face of competing priorities or unconducive behavioral settings. Other motivators and approaches are needed, which is where formative research and tailored behavior-change approaches help in designing effective handwashing interventions.

For a behavior-change intervention to be effective, it is important to understand exactly what kind of behavior you are trying to change, including the kind of action, the beneficiaries, and the kinds of benefits to consider. Refer to the guidance in the RapidBCD tool from *Behavior Change: Practical Implementation Guidance for Programs*[10] for corresponding recommendations related to the components of behavior highlighted below.

Components of behavior: Handwashing with soap at critical times	
ACTION	› **Routine, individual** action
BENEFICIARY	› Benefits the **present** self (clean hands, if visibly dirty) or **future** self (preventing illness) and is a **private good** (benefitting the individual, although for COVID-19 and respiratory illness, it can be a **public good**, benefitting others).
BENEFIT	› Benefits are **uncertain** (especially when hands do not appear dirty), **personal** (when in private) or **reputational** (when in public), and can be perceived as a **gain** (personal hygiene) or **loss** (focusing on negative health outcomes).

As discussed in our guide and evidence summaries, to build upon the kinds of behavior identified above, formative research is crucial to understand what the target population's current beliefs and attitudes are toward handwashing with soap, and what practices are currently common. Drawing on behavioral theories and evidence from the field to-date, a few key approaches are outlined in the following table, along with how they align with the RapidBCD tool. The approaches progress from the most basic to most resource intensive to implement, but the more intense interventions may lead to more substantial and cost-effective behavior change.

9   White et al., 2020.

10   World Vision, *Behavior Change: Practical Implementation Guidance for Programs*, 2021, https://s3.us-east-2.amazonaws.com/wvusstatic.com/2021/landing-pages/our-work/clean-water/BEHAVIOR+CHANGE+Guidance+for+Programs.pdf.

APPROACH	DESCRIPTION	RapidBCD Tool			CONSIDERATIONS
		Grab attention	Cause revaluation	Facilitate performance	
Environmental nudging	Nudges are "environmental cues engaging unconscious decision-making processes to prompt behavior change."[11] Environmental nudges can have a powerful effect on behavior, understanding that educating individuals to make informed decisions is not always an effective pathway to behavior change. There are multiple **environmental cues** and **subconscious factors** that influence behavior. Although most environmental nudging has been studied in the school environment, nudges exist in virtually every setting. Use of **visual cues** like color or the close and convenient placement of a handwashing station or soap can act as nudges to promote handwashing.	Using brightly painted pathways and signs can be **eye-catching** and direct individuals' attention toward handwashing facilities. Anything perceived as different, consciously or subconsciously, can **cause surprise** and disrupt typical patterns of behavior. For example, a **happy tap** is a handwashing station that is brightly colored or decorated with characters and images that grab attention.		Nudges alter the immediate environment to facilitate performance of the desired behavior. For example, placing a handwashing station in the proximity of a toilet and creating a path along the ground to follow makes it simple to wash hands. (See photo on page 9.) No text is needed to convey the message; **simple cues** are enough to facilitate performance. Happy taps also are modular so they can be easily moved around and placed in **convenient locations** to facilitate performance.	Nudges may be effective in a variety of settings, especially where high-quality handwashing products are available. In resource-limited interventions, environmental nudging can be implemented alone (i.e., without specific messaging or education) and still be effective.
Market-based approaches	Market-based approaches[12] create **user demand** and improve the supply of products and services, promoting local innovation and sustainability. **Marketing:** Advertising specific hygiene products as unique or more beneficial, such as a scented or antibacterial soap, can allow a family to upgrade their facilities to smell or look better. This helps them become more invested in consistently practicing handwashing. **Finance:** Providing small loans directly to families increases **affordability** and reduces upfront cost. Financing small businesses generates a hygiene market, which increases **user demand**.	Marketing approaches may grab consumer attention through **sales messages** delivered door-to-door or in public spaces. The products themselves are designed to be easier to use and to look attractive in the home, compared with lower-quality options.	Marketing messages may target any relevant **behavioral motives** identified as key in the context.	Access to better products closer to the household facilitates handwashing performance by providing **sustainable** product and material access (e.g., soap).	Market-based approaches may target only more profitable customers or function where the enabling environment is strong.

[11] Robert Dreibelbis et al., "Behavior Change without Behavior Change Communication: Nudging Handwashing among Primary School Students in Bangladesh," *International journal of environmental research and public health* vol. 13,1 129., 2016, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4730520/.

[12] iDE Global, *Tactic Report: Market-Based Approach to Hand Hygiene*, https://s3.amazonaws.com/www.ideglobal.org/files/public/iDE-TR_WASH_HandHygiene.pdf?mtime=20200713212833.

APPROACH	DESCRIPTION	RapidBCD Tool			CONSIDERATIONS
		Grab attention	**Cause revaluation**	**Facilitate performance**	
Community-based participatory approaches (Nurturing Care Groups, community health workers, etc.)	There are a number of names for the community approach to behavior change. A Nurturing Care Group is a group of 10 to 15 community-based volunteer behavior-change agents who meet every two weeks with project staff or government community health workers for training.[13] The volunteers then cascade down behavior-change messages and activities to caregiver groups at the neighborhood level. They also build **social support** and **cohesion** among members, and help link neighborhoods with community leaders, faith leaders, and government services/ staff (e.g., clinics and social workers).	Both home visits and group meetings allow community volunteers to reach every household, relying on **interpersonal communication** rather than only on posters or mass media. Women serve as **role models** and are key promoters of behavior change in their communities.	NCGs shift **social norms** by establishing trust through regular communication with community members and reaching entire communities. NCGs use the natural WASH motive of nurture to frame handwashing with soap as a vital way to keep one's children safe, healthy, and free of illness and disease.	The NCG approach assists in **sustainable** change because it uses community-led meetings over a long period of time. Being part of a smaller care group also reduces anonymity and increases accountability.	

[13] "Nurturing Care Groups," World Vision International, https://www.wvi.org/health/nurturing-care-groups.

BEHAVIOR CHANGE HIGHLIGHTS

The natural WASH motives

DISGUST

- Perceiving unwashed hands to be disgusting

- Hands being contaminated with something that is dirty, foul, or smelly

- A strong desire to avoid germs and contamination

COMFORT

- Believing that handwashing with soap will leave hands smelling nice

- Believing that handwashing with soap will make hands feel nice and help them feel refreshed, confident, and comfortable

NURTURE

- Parents who have a strong desire to care for their children and are attentive to their needs

STATUS

- Believing that handwashing with soap is linked to being respected in society

AFFILIATION

- The desire to fit in with others and adhere to the social norm of handwashing

Regardless of the approach used, it is important to keep in mind the roles of behavioral motives and an enabling environment in all behavior-change program design. Behavioral motives form the basis of how each behavior-change approach functions, and natural WASH motives in particular are powerful motivators to cause change both on an individual level and a community/societal level. For more guidance on tailoring implementations, please see the resource *Behavior Change: Practical Implementation Guidance for Programs*.[14]

❯ Natural WASH motives

There are five natural WASH motives: disgust, comfort, nurture, status, and affiliation. The five natural WASH motives address both individual (disgust, comfort, and nurture) and social motives (status and affiliation). Studies have found positive associations between handwashing and the natural WASH motives, as shown in the box at left.

❯ Social motives

Social norms and social support are strong motivators for changing behavior. Other people's expectations and behaviors are highly influential on whether or not an individual will engage in a behavior. Social motivation means that when individuals misbehave in a social setting, they will quickly correct their behavior, as behaving inappropriately in that setting is embarrassing, shaming, and can be harmful to the individual's social status or group affiliation.[15] For example, if proper handwashing becomes the social norm and facilities are positioned in observable settings, people can easily notice whether or not hands are being washed, which enhances positive social pressure.[16]

---

14 World Vision, *Behavior Change: Practical Implementation Guidance for Programs*, 2021, https://s3.us-east-2.amazonaws.com/wvusstatic.com/2021/landing-pages/our-work/clean-water/BEHAVIOR+CHANGE+Guidance+for+Programs.pdf.

15 Robert Aunger et al., "Behaviour Centred Design: Towards an Applied Science of Behaviour Change," *Health Psychology Review* vol. 10,4, 2016, p. 425-446, https://pubmed.ncbi.nlm.nih.gov/27535821/.

16 White et al., 2020.

⊙ Individual motives

Nurture is a key motivator for caregivers who strongly desire to care for their children and are attentive to their needs. Framing handwashing with soap as a vital way to keep their children safe, healthy, and free of illness and disease is a useful approach that targets a caregiver's nurture motive.

Disgust and comfort target an individual's attitudes and beliefs regarding personal hygiene. Although they may vary in degree from person to person, they are universal motives that can be used in hygiene messaging.

⊙ Enabling environment

Individuals often need support from the environment around them to change their behavior. The enabling environment is composed of the physical environment (i.e., infrastructure, location, money), the biological environment (i.e., one's own thoughts and feelings), and the social environment (i.e., family members, friends, community).[17] If an individual does not have access to proper infrastructure, like a handwashing facility, they are less likely to engage in the targeted, desired behavior: handwashing with soap. Similarly, if the community around the individual does not wash their hands after defecation or before handling food, the individual is less likely to wash their hands at those times, too. A recent systematic review suggested that the greatest opportunity to improve handwashing with soap may be to ensure access to a desirable and conveniently located handwashing facility, with soap and water present. Handwashing infrastructure can act as a cue or reminder and can work to overcome some of the psychological trade-offs that may prevent handwashing (such as perceived effort, and feeling busy or tired).

Environmental nudging in schools: Randomized controlled trial in Bangladesh

In a study in rural Bangladesh in 2016 by Dreibelbis and colleagues, nudges (see picture at right) were used to encourage handwashing with soap after toilet use in two primary schools. Nudges are "environmental cues engaging unconscious decision-making processes to prompt behavior change."[18] Handwashing was directly observed to increase from 4% at baseline to 74% at two weeks and six weeks post-intervention. No other hygiene messaging or education were used, indicating that this messaging-free intervention can be highly effective in behavior change, especially among school-aged children.

---

[17] White et al., 2020.

[18] Dreibelbis et al., 2016.

INDICATORS

The standard measurement of handwashing facilities comes from the Joint Monitoring Programme (JMP) Hygiene Ladder, which assesses facilities on a continuum from no facilities to basic service.

Joint Monitoring Programme Hygiene Ladder

Service level	Definition
BASIC	> Availability of a handwashing facility on premises with soap and water
LIMITED	> Availability of a handwashing facility on premises without soap or water
NO FACILITY	> No handwashing facility on premises

NOTE: Handwashing facilities may be fixed or mobile and include a sink with tap water, buckets with taps, tippy taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water but does not include ash, soil, sand or other handwashing agents.

There are several ways to monitor handwashing behavior, although we do not yet have an ideal indicator or form of measurement. The table below discusses some monitoring approaches, some example questions, and their strengths and limitations.[19]

Handwashing behavior monitoring approaches

MEASURE	EXAMPLE QUESTION	STRENGTHS	LIMITATIONS
Existence of place for handwashing	Do you have a designated place for handwashing in your home? (If so) Is there currently soap present? Is there water currently present?	Quick and easy to assess objectively as a part of planned data collection. This is the JMP standard.	May understate handwashing behavior for poorer households or overstate for some households as presence of infrastructure doesn't guarantee behavior. Does not capture behavior in public settings or institutions.
Structured observation (directly observing behavior over the course of several hours)	N/A	Measures actual behavior by occasion.	Expensive, time consuming, and knowing they are being observed may cause some people to alter their behavior. Some time periods (e.g., at night) or occasions that aren't regularly scheduled (e.g., after changing a child's diaper) are difficult to observe.
Self-reported behavior by occasion	Tell me each time that you washed your hands with soap yesterday. [Tally occasion, without prompting, with a list of options.]	Allows some estimation of when handwashing is taking place.	Somewhat prone to social desirability and recall bias. For example, in some cultures certain handwashing occasions may not be mentioned because of perceived taboo (e.g., after defecation).
Self-reported behavior frequency	How many times did you wash your hands with soap yesterday?	Simple to administer.	Very prone to both social desirability and recall bias.
Covert recall	Tell me each of the steps you would take if you were in the market purchasing food and walked home and began cooking. [Listen for key handwashing occasions, and probe to ask if soap was used when washing hands, if not specified.]	Less prone to social desirability and recall bias because participants are not aware of the behavior you are seeking.	Complicated to administer and may not capture actual rates of handwashing. Handwashing may be omitted because it is thought of as a routine or unimportant action.

[19] James B. Tidwell, "What quantitative measures can be used to measure handwashing behaviour, mask use or physical distancing?" COVID-19 Hygiene Hub Resources, 2020, https://resources.hygienehub.info/en/articles/4152032-what-quantitative-measures-can-be-used-to-measure-handwashing-behaviour-mask-use-or-physical-distancing.

⊙ WASH Business Plan indicators

In line with JMP standards, World Vision is actively tracking a number of outcome and output indicators for access to hygiene facilities and handwashing behavior in households, schools, and healthcare facilities. See the following table for indicators and definitions.

HOUSEHOLDS have access to basic hygiene practices.	# of people gaining access to a facility or device that enables them to wash their hands effectively using running water (water tank with tap, bucket with tap, tippy tap, or other similar device). Handwashing stations may be permanent structures (such as piped water to a faucet), semipermanent structures (such as a tank with tap), or portable devices.
SCHOOLS have access to basic hygiene practices.	# of children gaining access to handwashing facilities located on school premises with both water and soap, available for girls, boys, and teachers. # of schools gaining access to handwashing facilities on premises that have both water and soap available. # of schools with at least one basic handwashing facility, constructed or subsidized by World Vision, that meets the needs of people with limited mobility.
HEALTH FACILITIES have access to basic hygiene practices.	# of healthcare facilities gaining access to functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) available at points of care and within 5 meters of toilets. # of facilities in which delivery rooms have basic standard written policies and protocols for cleaning. # of health facilities where cleaning staff have been trained on cleaning procedures in the most recent reporting.

SDG 6.2 calls for adequate and equitable hygiene for all. There are a number of hygiene-related indicators that are also being monitored toward the successful completion of these targets, including:

- Proportion of population using a handwashing facility with soap and water (SDG 6.2.1b)
- Proportion of schools with access to basic handwashing facilities (SDG 4.a.1g)