



BEHAVIOR CHANGE:

Evidence Summary for Safe Infant and Child Feces Disposal

SEPTEMBER 2023



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Part 1

EVIDENCE AND EXPERIENCE

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.



HEALTH EVIDENCE

The Joint Monitoring Programme defines safe child feces disposal (SCFD) as “toilet/latrine use by children or feces disposal in a toilet/latrine or buried,”¹ and typically applies to children ages 3 and younger. A review of 25 countries conducted in 2016 found that more than 50% of households in low- and middle-income countries practiced unsafe child feces disposal (UCFD), including as many as 84% of households in India.² Although this often is connected to whether a household has an improved sanitation facility on the premises, the study found that even in households with latrines, as many as 64% practiced UCFD.

Exposure to child feces presents many of the same health hazards as open defecation, such as diarrheal diseases, environmental enteropathy, and impaired growth and development. Infants in low- and middle-income countries are particularly vulnerable to fecal pathogen contamination in the domestic environment due to mouthing behaviors during the exploratory stage of development. One study in Bangladesh found that UCFD for children younger than 2 was associated with a 35% increase in risk of soil-transmitted helminthic infections.³ Though many sanitation interventions target only adults when promoting latrine use, ensuring the safe disposal of child feces is just as important to community health and well-being from a public health standpoint. Eliminating UCFD will contribute to Sustainable Development Goal 6.2 of eliminating all open defecation by 2030.

WORLD VISION’S EXPERIENCE

World Vision established SCFD as one of eight key water, sanitation, and hygiene (WASH) behaviors for our current WASH Business Plan (2021–2025), although SCFD has not been a major emphasis in the past. Many offices are now starting to consider this important behavior, including World Vision’s office in Indonesia, which is currently conducting formative research within the framework of Behavior-Centered Design to better understand the behavioral determinants of SCFD. Results from their experience and other program offices will be included in future updates to this document.

¹ T. Morita, S. Godfrey, and C.M. George, “Systematic review of evidence on the effectiveness of safe child faeces disposal interventions,” *Trop Med Int Health*, vol. 21(11), 2016, p.1403–1419, <https://doi.org/10.1111/tmi.12773>.

² Ibid.

³ Ibid.

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

SCFD was also addressed in World Vision's Nurturing Care Group (NCG) pilot in Ghana.⁴ NCGs have been shown to double the behavioral change of other behavior-change approaches in other sectors.⁵ NCGs in Ghana reached 9,326 households with training on the proper disposal of infant feces, with SCFD increasing in the intervention group from 39% to 65% compared to a smaller increase in the control group from 30% to 46%. However, more research is required to understand the full extent of how NCGs can promote SCFD.

World Vision's current WASH Business Plan for 2021 to 2025 includes multiple targets that improve and expand upon the successes of our previous five-year business plan. Expanding behavior-change programming and generating tools that equip World Vision staff to increase capacity for behavior change is a priority of our current business plan.

⁴ World Vision, *Nurturing Care Groups contribute to delivering transformative WASH at scale*, 2023. <https://www.wvi.org/sites/default/files/2023-04/TechnicalbriefNurturingCareGroups.pdf>.

⁵ World Vision International, "Nurturing Care Groups," <https://www.wvi.org/health/nurturing-care-groups>.



Part 2

KEY BEHAVIOR CHANGE APPROACHES

Few studies have evaluated interventions that specifically target SCFD, and even fewer have evaluated the efficacy of behavior-change interventions to produce health outcomes. Given the current literature, a few approaches emerge as potential avenues for generating effective behavior change in communities, particularly rural communities in low- and middle-income countries where the burden of UCFD is greatest.

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 on the Rapid Behavior-Centered Design (RapidBCD) tool⁶ from *Behavior Change: Practical Implementation Guidance for Programs*⁷ for corresponding recommendations related to the components of behavior highlighted below.

Components of behavior: Safe infant and child feces disposal

ACTION

› **Routine, individual** action

BENEFICIARY

› Benefits the **present self** (household cleanliness) and **future self** (preventing illness) but is primarily a **public good** (benefitting the community)

BENEFIT

› Benefits are **uncertain**, can be **personal** (health) or reputational (if social norms are activated), and can come in the form of **gains** (household cleanliness, perception of being a good caregiver) or avoiding **losses** (health impacts)

As discussed in all our guides 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 SCFD, and what practices are currently common. However, drawing on behavioral theories and the limited 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 burdensome to implement, but the more intense interventions may lead to more substantial behavior change.

⁶ This tool can be found in Appendix 2 of *Behavior Change: Practical Implementation Guidance for Programs*.

⁷ World Vision, *Behavior Change: Practical Implementation Guidance for Programs*, 2021, <https://s3.us-east-2.amazonaws.com/wwvstatic.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	
<p>Mobile health (mHealth) programs⁸</p>	<p>mHealth is a low-cost approach to deliver key public-health messages to a large target audience. It can consist of sending text and voice messages regarding a public-health topic or behavior, such as SCFD. Particularly when targeting a large geographic area or population where information is likely to lead to behavior change, mHealth is readily scalable to reach people quickly and efficiently.</p>	<p>Phone calls grab attention and immediately engage recipients in the public-health message, without requiring literacy. Text messages with pictures or other multimedia also can be used. Because they do not require immediate action, they can be viewed at a later, sometimes more convenient, time.</p> <p>Messaging must vary so it can continue to grab the attention of recipients.</p>	<p>A variety of messages might address different drivers of behavior change.</p>	<p>mHealth messaging provides constant reminders, regardless of one's physical environment, so long as recipients have their mobile phone nearby.</p>	<p>In low-resource urban settings, mHealth's use of mobile technologies can be implemented at scale. Though many urban community members have mobile phones, access to mobile phones and literacy must be determined before implementation.</p> <p>mHealth is found to be even more effective when combined with in-person interventions such as community health worker visits or workshops.</p>
<p>Market-based sanitation (MBS) and child potties</p>	<p>MBS is an umbrella term that includes Sanitation Marketing, sanitation market shaping, and sanitation as a business. MBS can be used to create user demand and improve supply of products and services. It often is not a stand-alone approach.</p> <p>Marketing: Advertising specific toilet products as unique or more beneficial, such as a child-friendly latrine, child potty, or scoop, can allow a family to upgrade its facilities to smell or look better. This may lead caregivers to become more invested in the use and maintenance of their latrine for themselves and their children.</p>	<p>Cause surprise in marketing/media campaigns. Mass media campaigns are especially useful in denser or urban settings and can communicate information and social norms.</p> <p>Utilize disgust in marketing materials to motivate viewers to alter behavior, particularly highlighting the disgust and harm in UCFD.</p>	<p>MBS increases the value of products and services by communicating benefits while decreasing financial costs.</p> <p>Framing sanitation messaging in terms of preventing a loss, such as not losing money to health bills or avoiding social disdain by purchasing a</p>	<p>Cultivating a sanitation market increases availability of products, particularly specialty products like child-friendly toilets. Because use of a latrine or disposal of child feces is a routine action (which can be more challenging), promoting a planned one-time purchase of a latrine or toilet upgrade facilitates sustained use.</p> <p>Microloans increase accessibility of latrines and potties. Financing toilet upgrades (product choice)—such as items that</p>	<p>Household latrines must already be in place, i.e., the user demand for sanitation must be developed first before shifting to child-friendly latrines. Marketing needs to target caregivers who would purchase the potties, and a sanitation market needs to exist before introducing child-specific hardware.</p>

⁸ S.K. Biswas, E.D. Thomas, J. Masud, F. Zohura, T. Hasan, T. Parvin, M.S. Islam Bhuyian, M.I. Minhaj, F. Johura, M. Sultana, S. Tahmina, S. Monira, J. Perin, M. Alam, and C.M. George, "Formative Research for the Design of a Baby Water, Sanitation, and Hygiene Mobile Health Program in Bangladesh (CHoBI7 Mobile Health Program)," *The American journal of tropical medicine and hygiene*, 104(1), 2021, p.357–371. <https://doi.org/10.4269/ajtmh.20-0456>.

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APPROACH	DESCRIPTION	RapidBCD Tool			CONSIDERATIONS
		Grab attention	Cause reevaluation	Facilitate performance	
<p>Market-based sanitation (MBS) and child potties (cont.)</p>	<p>Finance: Providing small loans directly to families increases affordability and reduces up-front cost. Financing small businesses can support the development of a sanitation market, which can support user demand. This can extend beyond basic latrines to include upgrades and child-friendly latrines as well.</p>	<p>Another method of delivery is to send trained community health workers or salespeople door-to-door with sanitation messages in smaller or hard-to-reach communities.</p>	<p>child potty, can improve uptake.</p> <p>Communicating the rarely understood information that child stools are as infectious as adult stools can trigger disgust.</p>	<p>improve smell, cleanliness, maintenance, or desirability for children to use latrines—facilitates use.</p>	
<p>Nurturing Care Groups (NCG)⁹</p>	<p>An NCG 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. They then cascade down behavior-change messages and activities to caregiver groups at the neighborhood level. NCGs also build social support and cohesion among members, and help link neighborhoods with community leaders, faith leaders, and government services/staff (e.g., clinics, social workers).</p>	<p>Both home visits and group meetings allow community volunteers to reach every household. Women serve as role models and are key promoters of behavior change in their communities. As the typical caregivers of young children, women can lead the shift from UCFD to SCFD.</p>	<p>NCGs can shift social norms by establishing trust through regular communication with community members.</p>	<p>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.</p>	<p>NCGs have proven to be effective at increasing latrine use among adults as well as increasing SCFD. Where NCGs are already in place, SCFD promotion can be easily introduced into trainings.</p>

⁹ World Vision, *Nurturing Care Groups Project Model: Health & Nutrition Technical Brief*, 2020, <https://www.wvi.org/sites/default/files/2020-06/Nurturing%20Care%20Groups%20CPM%20Brief%20June%202020.pdf>.



Part 3

BEHAVIOR CHANGE HIGHLIGHTS

Regardless of the approach used, it is important to keep in mind the heightened effectiveness of combination interventions and the role of behavioral motives, including social norms. The responsibility for SCFD often falls on caregivers, especially mothers, although once children begin to grow older, they also may be the recipients of behavior-change messaging. Because the harms of UCFD affect communities rather than just the household itself, leveraging norms to drive behavior change may be particularly effective.

➤ Behavioral motives

The social acceptability of open defecation, in particular for young children, may act as a barrier to change. In many communities, child feces are seen as less hazardous than adult feces. Reframing the improper disposal of child feces as similarly harmful to health requires a shift in knowledge, and doing so in group settings can leverage social norms. Often, the responsibility for the child's actions is placed on the caregivers, so interventions that use social norms as a means of promoting behavior change must take this into account by targeting the appropriate actors. Giving a social cost to UCFD can help provide accountability and facilitate performance.

Other behavioral motives include natural WASH motives such as disgust and nurture. Disgust may be triggered by highlighting the infectious nature of child feces. Nurture is a particularly useful behavioral motive within SCFD because the behavior itself is reliant on the mother-child relationship, as mothers typically are responsible for childcare and household duties. Nurture may be activated by associating SCFD as the role of a good parent in caring for their child.

➤ Combination interventions: Hardware and behavior change

Communities that have existing sanitation infrastructure that is properly used on a consistent basis are better positioned for interventions targeting children and SCFD. Therefore, these programs often follow or work in tandem with latrine-use interventions. In combination with a behavior-change intervention, hardware provision increases the effectiveness of the intervention and improves the uptake of SCFD. The integration of both intervention types has been shown to improve effectiveness, with some studies reporting as high as an 85% practice of SCFD in the intervention group compared with a 4% practice in the control group.¹⁰ Formative research is required to better understand what types of hardware are preferred by the target population, but many studies have reported that SCFD was only practiced in households that already had latrines. This finding is

¹⁰ Faruque Hussain, Stephen P. Luby, Leanne Unicomb, Elli Leontsini, Tania Naushin, Audrey J. Buckland, and Peter J. Winch, "Assessment of the Acceptability and Feasibility of Child Potties for Safe Child Feces Disposal in Rural Bangladesh," *The American Journal of Tropical Medicine and Hygiene*, vol. 97(2), 2017, p.469–476, <https://doi.org/10.4269/ajtmh.15-0932>.

particularly important to consider when choosing a target population or target area that may have low coverage or utilization of latrines prior to the SCFD intervention. Though SCFD includes the burying of child feces, which does not require a latrine, many studies have found that this behavior is rarely practiced, and that the presence of a household latrine is highly associated with the likelihood of practicing SCFD.

INDICATORS

The measured percentage of SCFD is often based on household latrine access rather than actual child feces disposal practices, so current measurements of prevalence are likely underestimated. In many studies, child feces disposal is measured by self-report, which introduces risk of bias and decreases the overall quality of the study. Caregivers have full control of the disposal of diapers

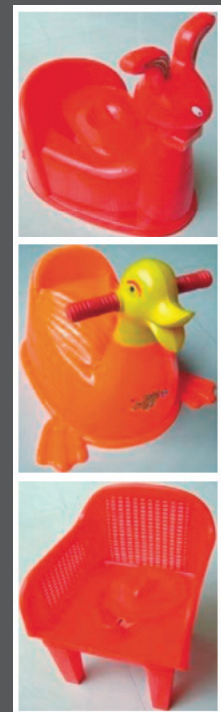
when caring for young children and babies. However, once children outgrow the need for diapers but are too young to properly use a toilet, it becomes more difficult to monitor their defecation practices and more difficult to accurately report. Stronger measurement tools for latrine use and child feces disposal are needed to more accurately understand both the current levels of SCFD and how effective interventions are at affecting change.

One attempt at measuring latrine-use frequency and excreta-disposal practices can be found in the Safe San Index, which quantifies the hygienic safety of a household's defecation and feces disposal.¹² It measures latrine-use frequency at the individual level by asking a multitude of behavior questions grouped by demographic. A sample of survey questions is listed on the following page, with questions 7 and 8 specifically addressing child feces disposal.

Child potties for behavior change: A combination intervention

One study by Hussein et al. (2017)¹¹ examined how the use of child potties influences acceptability or feasibility of use by children. To address the inability of young children to properly use adult latrines or their lack of interest in doing so, households were given one of three different child potty designs that were colorful and fun, as pictured to the right (from top to bottom: a rabbit, a duck, and a chair). In addition to providing the child potties, study participants were included in community meetings and home visits to discuss topics such as potty familiarization, introduction of potty training, problems children encounter while defecating in the potty, potty cleaning and maintenance, benefits of and barriers to potty use, and location of feces disposal.

The child potties were positively received by both children and their caregivers. Some mothers reported their own motivation for teaching their children to use the child potty, stating that it portrayed the image of a “clean mother” to neighbors, targeting the behavioral motives of status and affiliation (social acceptability). Potties also served as reminders or cues to action for the children when placed in common spaces or rooms where the child would often see the child potty and be reminded to use it. This intervention increased the self-efficacy of caregivers to potty train their children and shifted social norms.



¹¹ Ibid.

¹² Marion W. Jenkins, Matthew C. Freeman, and Parimita Routray, “Measuring the Safety of Excreta Disposal Behavior in India with the New Safe San Index: Reliability, Validity and Utility,” *International Journal of Environmental Research and Public Health* 11, vol. 8, 2014, p.8319–8346, <https://www.mdpi.com/1660-4601/11/8/8319>.



Sample Safe San Index survey questions

SURVEY QUESTION	RESPONSE OPTIONS (SCORE VALUE)
1. How often do you (respondent) personally use the toilet to defecate?	
2. How often do the elders (over 60 years of age) in your household use the toilet to defecate?	
3. How often do the (other) married women who are not elders use the toilet to defecate?	
4. How often do the (other) unmarried women (over 15 years old) who are not elders use the toilet to defecate?	Never (1)
5. How often do the married men who are not elders use the toilet to defecate?	Sometimes/occasionally (2)
6. How often do the unmarried men (over 15 years old) who are not elders use the toilet to defecate?	Usually (3)
7. When school-age children in your household are at home, how often do they use the toilet to defecate?	Always (4)
8. For young children who are too young to be able to use the toilet, after they defecate on the ground in your courtyard or in your house, how often do you put their feces in the toilet?	



Behavior Change: Evidence Summary for Safe Infant and Child Feces Disposal | Version 1.0 | Published Sept 2023

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RDU19343_CFD_0923 © 2023 World Vision, Inc.