

WASHplus LEARNING BRIEF

Behavior-Centered Approaches to Improve Health Outcomes



Comprehensive Behavior-Centered Approaches

Decades of interventions focusing on increasing access to WASH facilities and services without effectively attending to the related practices explain the failure to see desired health and social benefits. These benefits can only be realized when households and communities consistently and correctly practice improved behaviors. Hardware alone is insufficient to change behavior. Likewise, promoting improved behaviors without addressing shortcomings in the products and services required to practice the behaviors makes change difficult, if not impossible. Hygiene promotion in schools that have schoolchildren sing a happy hygiene song but resort to defecating in the bushes due to a lack of child-friendly latrines does not lead to desired outcomes.



WASHplus trained local sanitation entrepreneurs to offer products and financing for improving and replacing latrines, encouraging coordination with demand-creation activities.

The WASHplus project supports healthy households and communities by creating and delivering



interventions that lead to significant improvements in access, practices, and health outcomes related to water supply, sanitation, and hygiene (WASH) and household air pollution (HAP). Reaching beyond increasing access to WASH and cooking technologies, WASHplus works to influence consistent and correct practice of WASH and clean cooking behaviors, specifically:

- Safe disposal of feces, including infant feces
- Safe storage and treatment of adequate quantities of household water
- Handwashing at critical junctures, particularly after defecation and before food preparation and feeding/eating
- Safe food handling and storage
- Hygienic management of menstruation
- Use of an improved cookstove and other protective cooking-related behaviors



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Beyond increased coverage: why focus on improved practice? Above, an improved urine diversion latrine sits unused for its intended purpose and well-used as a storage shed.

WASHplus focuses its technical assistance and global leadership on behavior-centered approaches that target improved WASH practices as the key outcome of its initiatives. A strong supporting evidence base demonstrates that consistent, correct, and sustained practice of these behaviors is associated with improved health and development outcomes. Therefore, the WASHplus approach aims at stimulating and maintaining changes in key WASH practices.

This technical brief presents the WASHplus approach to behavior change applied in various country settings to improve WASH

practices and serve as the foundation of the project's global guidance. WASHplus refers to its particular behavior change approach as behavior-centered to emphasize its comprehensive nature and to clearly distinguish it from one particular change tactic, behavior change communication (BCC). The approach draws on behavior theory and evidence from previous program experience. At the same time, the WASHplus approach is open to incorporating innovation, risk-taking, and new approaches to change. Our cross-cutting approach is grounded in systems thinking and the social ecological models that nurture human growth and development, through manipulating the complex, interacting, and interdependent elements that form the whole system. Social ecology acknowledges the influential role that social, institutional, cultural, and policy contexts have on individual action and the multiple levels of influence—individual, family, institutional—at play at one time (McLaren & Hawe 2005).

The science of habit formation, in addition to a focus on harnessing social norms, contributes to consistent and sustained practice of WASH behaviors. What follows is an overview of the elements contributing to WASHplus's hybrid strategy, including examples of how aspects of the following theories and methodologies were applied to its behavior-centered approach:

- The WASH Improvement Framework, or WIF
- Systems Thinking
- The BEHAVE Framework
- Stages of Change (the Transtheoretical Model) and social ecological approaches
- Small Doable Actions
- The Science of Habit

The brief is organized around five principles of the WASHplus behavior-centered approach:

Principle 1: Sustained practice of improved WASH behaviors requires a comprehensive approach that is multi-layered and addresses multiple domains.

Principle 2: Behavior-centered approaches are organized around a hypothesis of change, recognizing that WASH behaviors (all behaviors, in fact) are influenced and maintained by a set of context-specific internal and external determinants.

Principle 3: Behavior-centered approaches require research to shape programming. Various research methods systematically identify behavioral determinants, help explain audience context, and hone in on emotive factors that influence behaviors. This research may be original or findings applied from previous, relevant research.

Principle 4: Behavior-centered approaches accommodate relevant behavioral options, starting from one's current context (or stage) and negotiating small, doable improvements toward ideal WASH practices.

Principle 5: Behavior-centered approaches reach to the reflexive mind responsible for habits, as well as the reflective, conscious, and deliberate mind.

The project's strategy for improving WASH behaviors is both theory-based and grounded in established best practice. Because the approach is a hybrid of several schools of thought and practice, this brief also highlights principles of behavior-centered approaches to further examine how WASHplus worked to influence WASH behavior change.

Principle 1: Sustained practice of improved WASH behaviors requires a comprehensive approach that is multi-layered and addresses multiple domains.

As described in the introduction, behavior change is the fundamental objective of WASHplus's comprehensive approach to achieve health and development outcomes through WASH—an approach that requires programmers to focus on multiple domains at once.

The WASHplus Project's Underlying Change Framework: The WASH Improvement Framework (WIF)

The WASHplus approach is constructed around the USAID WASH Improvement Framework, which posits that to realize sustained WASH improvement, three key domains must be engaged:

1. Access to hardware and services, such as water supply, soap, sanitation products, and financial products like loans
2. An enabling environment, which includes a supportive policy environment, institutions with the needed capacities,

The WASH Improvement Framework



¹ The Framework evolved over two decades, beginning with the USAID-funded Environmental Health Project (1999-2004), and first applied in Central America in 1999. Initially called the Hygiene Improvement Framework, it has since been refined by UNICEF, the Water and Sanitation Program of the World Bank, USAID's Hygiene Improvement Project 2005-2009, and the current WASHplus project (2010-2016), being implemented by FHI 360 and partners. Many of the influential development partners now employ some variation of a three or four domain framework illustrating the key role of supply/service, enabling environment, and demand creation in stimulating WASH improvement; some add a knowledge sharing domain to their framework.

USING THE WIF TO ANALYZE AND PLAN

In Bangladesh, a comprehensive behavior change strategy was developed and implemented to increase access to water and sanitation, and improve capacity of local government and the community to manage WASH services. Using behavioral analysis and program experience, WASHplus and local partners crafted a cross-cutting strategy that addressed all domains of the WIF:

1. **Focus modified CLTS-like triggering and community follow-up on improving or replacing existing latrines (households usually had some kind of latrine, although most were of poor quality)**
2. **Facilitate supply of sanitation products for improving latrine quality by identifying latrine options for the challenging terrain (inundation, both tidal and flooding)**
3. **Build skills of local vendors to construct and market products that meet the challenges of the southwest Bangladesh environment**
4. **Strengthen linkages and community-triggering/demand creation, facilitating timely follow-up in communities by entrepreneurs offering a choice of sanitation products.**
5. **Reorient outreach workers to be partners in change and improve WASH practices rather than promote hygiene**
6. **Disseminate the new National Hygiene Strategy within local government, elicit commitments, and facilitate planning of renewed government commitment to open defecation free communities**

coordinated planning, and budgeting

3. Hygiene promotion and demand creation that includes social mobilization, community participation, community-led total sanitation (CLTS), social marketing, and BCC

Though BCC is often used as a substitute for describing behavior change interventions, WASHplus considers BCC as only one of many tactics necessary for facilitating consistent and correct practice of WASH behaviors.

WASHplus uses the WIF as an analysis, planning, and evaluation framework. To plan new WASH initiatives or identify bottlenecks, practitioners can use the WIF to assess the current situation in relation to the myriad components that comprise the three domains. Programmatic responses are then developed to address deficiencies and reinforce strengths. Coming full circle, the WIF can serve to develop a monitoring or evaluation framework to assess how well program initiatives are achieving targets. (See box on using WIF for planning in Bangladesh.)

Most WASH programs, including WASHplus, cannot directly address all of the components of the domains, therefore, using the WIF to guide improved WASH practices requires collaborative approaches with government agencies, the private sector, and other development partners. Communication also plays a key role in maintaining this coordination. Another component of WASHplus's change approach, systems thinking, harnesses the interconnectedness within ecosystems and facilitates collaboration and coordination. A central concept of systems thinking is the concept of "bridging and bonding"—bridging across different sectors (e.g., private commercial sector, health, water, education, youth, law enforcement divisions of the public and NGO sectors) and bonding or strengthening coordination within the same sectors (e.g., hygiene and nutrition coordinating within the health ministry; or NGO and government water projects synchronizing in a region). This bridging/bonding concept facilitated WASHplus's application of the WIF to ensure all domains could be addressed, even when beyond the scope and budget of WASHplus activities.

Coverage Is Not Enough, but Supply Plays an Essential Role

While WASHplus does not put improved access to products and services at the center of its programming, its WASH initiatives emphasize the role of enabling products to facilitate improved WASH practices. Put simply, few WASH practices can be performed without access to specific services and products—handwashing requires flowing water and soap; menstrual hygiene requires access to some kind of pad or product and washing facility with water. These products facilitate consistent and correct practice of each particular WASH behavior. A handwashing station is a classic example of an enabling product because it addresses several barriers to consistent and correct handwashing: it ensures that flowing water is close and readily available where the behavior should occur (by latrines or kitchens), and it also serves to remind family members to wash their hands at that particular juncture. Fixed handwashing stations also support consistent and correct handwashing because they allow the behavior to be performed in a stable context over time, which is a fundamental element of habit formation.

The BEHAVE Framework SM

PRIORITY AUDIENCE	BEHAVIORAL OBJECTIVE	KEY FACTORS	ACTIVITIES
<i>in order to:</i>	<i>to:</i>	<i>we will focus on:</i>	<i>through:</i>
Some specific audience segment	...do a particular feasible (yet effective behavior)	a few “behavioral determinants” most influential in challenging that particular behavior ...for that particular audience	focused activities addressing these factors

Principle 2: Behavior-centered approaches are organized around a hypothesis of change, recognizing that WASH behaviors (all behaviors, in fact) are influenced and maintained by a set of context-specific internal and external determinants.

The BEHAVE Framework Incorporates a Hypothesis of Change into WASHplus Initiatives

Effective, theory-based behavior-centered approaches are built around a hypothesis of change; driven by activities targeting priority audience segments; and address clearly identified behavioral determinants, which are the enabling and barrier factors most influential in the performance or nonperformance of a given behavior for a particular population segment. Program activities then strategically address the particular key determinants. For example, in Uganda, a radio drama series integrated normative themes into nutrition scripts to harness social norms to wash hands properly before cooking and feeding; and in Bangladesh, Mali, and Kenya, sanitation marketing activities addressed the determinant of access and choice of latrine alternatives to achieve improved sanitation. Many WASHplus country efforts were guided by the BEHAVE Framework, which defines four key decisions essential in developing a hypothesis of change—priority audience, behavioral objective(s), determinants, and activities (Jimerson et al 2004).

A host of factors or behavioral determinants are critical to the performance or nonperformance of WASH practices. Increasing knowledge and awareness is necessary, but not sufficient. People need to know how and when to wash hands, but this is not enough to sustain consistent and correct handwashing, which requires flowing water and soap or cleansing agent. Also, consistent handwashing requires social norms supporting handwashing. In general, the



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Hanging a tippy tap near a latrine helps promote consistent and correct handwashing practice.



BRIDGING AND BONDING FOR WASH IMPROVEMENT IN ZAMBIA

WASHplus in Zambia (called Schools Promoting Learning Achievement through Sanitation and Hygiene, or SPLASH) used the Whole System in a Room (WSR) approach to launch a provincewide school WASH program. The WSR process strengthened bonds among various government agencies responsible for different aspects of school WASH, such as facility construction, operations and maintenance, water testing, governance, teacher training, and hygiene education, and then created bridges to private and nongovernmental actors to support aspects that the government was not able to either pay for or manage with limited resources. Through the WSR, all actors became invested in a common action plan for provincewide WASH in schools.

cross-cutting factors most influential in WASH behaviors include:

- Perception of risk (of fecal contamination)
- Skills to perform the behavior
- Access to key enabling products
- Self-efficacy (the sense that individuals can do something to make things better)
- Key knowledge
- Social norms that support or condone the practice (the unwritten rules that guide individuals to do or not do certain behaviors, that remind people what is expected, and what those important to them think they should do).

Note the domains of the WIF correspond to the major determinants of WASH behavior change, further strengthening its utility as a behavior-centered planning tool—access to enabling products corresponds to supply; policy, social norms, and skills correspond to the enabling environment; necessary knowledge and self-efficacy relate to the demand domain as they are addressed through communication.

Principle 3: Behavior-centered approaches require research to shape programming. Various research methods systematically identify behavioral determinants, help understand audience context, and hone in on emotive factors that influence behaviors. Epidemiology and other health data help prioritize the behavioral, audience, and geographic focus. This research may be original or findings applied from previous, relevant research.

Research Informs Behavior-Centered Approaches

All behavior-centered approaches are human-centered and reflect the context and reality of those communities where behavior is targeted for improvement. WASHplus uses various techniques to better understand the context and determinants of change, as well as the emotional motivators and cues that resonate with particular audience segments. Existing data and information, together with project-generated insights, are essential to plan comprehensive behavior change strategies. In Zambia, WASHplus's qualitative research and program insights directed the team to actively include men and boys into the menstrual hygiene strategy. A series of focus groups demonstrated that boys well understood how menstruation affected girls' school attendance and absenteeism, citing a range of contributing factors. While the boys generally discouraged girls from attending school while menstruating, they showed great enthusiasm and empathy at events and fairs to sew pads for their sisters and relatives so they could remain active and not be stigmatized during "that time." WASHplus applied these findings and included males in menstrual hygiene management programming.

In Bangladesh, vulnerable communities took part in iterative exercises to identify small doable actions for safe disposal of infant and child feces by age cohort. WASHplus incorporated an audience research method called

Trials of Improved Practices, or TIPs, to engage households as consultants to try enabling product options like potties and agricultural hoes (used as scoops) in their homes and/or develop feasible and effective strategies for disposing of feces from cloth, potties, and the courtyard. In Bangladesh and Nepal, WASHplus established TIPs to understand household perspectives of different cookstoves. The project learned that existing cookstoves weren't large enough to accommodate all kinds of cooking, like holiday cooking, animal feed, or liquor, so the traditional stove was still used alongside the new, improved stove. Another finding was that because new cookstoves required chopping wood into small pieces and feeding it into the stove over time, cooks needed to completely change the way they prepared and cooked food, which cooks did not like because they could not multi-task.



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WASHplus-trained community health workers and volunteers in Mali demonstrated handwashing for mothers and children and stressed its importance before cooking or eating.

An understanding of the epidemiologic profile of the intervention area is another fundamental part of the planning equation, but this information is often already available from other sources. Behavioral options are then crafted by considering epidemiological risk, potential effectiveness of the small doable action, and feasibility of change; and various data inform each of these criterion. In southwest Uganda, as in many other places, the high rates of diarrhea specifically at the start of complementary feeding suggested the need to focus on handwashing before food preparation and feeding and develop food hygiene actions for young children 6 months to 2 years. WASHplus combined epidemiologic data with more focused behavioral concept testing of small doable food safety actions to develop a behavioral approach to food hygiene.

Principle 4: A behavior-centered approach accommodates relevant behavioral options, starting from ones current context (or stage) and negotiating small, doable improvements toward ideal WASH practices.

Considering Stages of Change to Improve WASH Behaviors

Prominent in the WASHplus hybrid behavior-centered approaches are Prochaska and DiClemente's Transtheoretical Model or Stages of Change (2013). In this model, change is a process involving progress through a series of stages: starting from precontemplation to contemplation, preparation, action, and maintenance; some have added relapse. Different factors motivate behavior at various stages of behavior change, and WASHplus programs are designed to adapt to the particular stages that individuals, households, or communities have achieved. Those who have always defecated in the open, without

a thought to improvement, are soundly in the precontemplation stage, and, therefore, require triggering approaches designed for that stage, like those used in CLTS. Those in the preparation, action, and maintenance stages, meanwhile, could be best motivated through product demonstrations and sanitation markets that facilitate acquisition of the products needed for improved sanitation practice. WASHplus conducted situation analyses that revealed the stage(s) of change of key population segments, and then designed appropriate activities to move them toward improved practice.

Improving WASH Practices...One Small Doable Action at a Time

The WASHplus behavior change strategy is also built around the evidence that people can rarely go directly from their current practice to ideal practice, for example, from open defecation to consistent use of a flush toilet. Based on this understanding, WASHplus incorporates a small doable action, or SDA, approach to changing WASH practices (WASHplus 2015). Rather than setting the behavioral objectives as the ideal WASH practices (e.g., store and serve water from a raised, closed water filter with tap; put children in diapers; wash hands of all family members at all critical junctures with running water and soap), we identify a menu of behaviors that move away from the unacceptable toward the ideal. Small doable actions are behaviors that are deemed feasible to perform in resource-constrained settings from the householder point of view and are also effective in improving health at the individual and community levels. Behaviors that meet these two criteria—feasible and effective—are considered small doable actions and are included in the menu of options family members can select to improve their WASH practices.

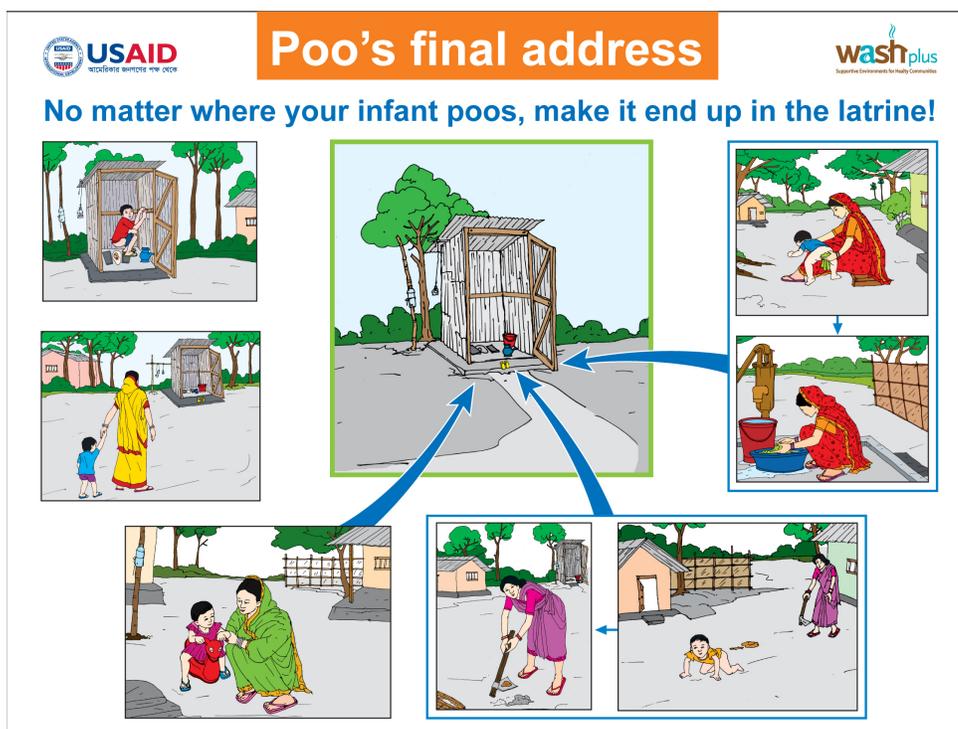
WASHplus small doable actions for the safe disposal of child feces are captured in this job aid used to negotiate improved practices in Bangladesh.

These small doable actions build on the concept of the sanitation ladder that recognizes sanitation improvement is a gradual process of moving communities from unacceptable open defecation to improved options (rudimentary latrine) to the ideal of a ventilated improved pit or pour flush latrine. Or the small doable options

may form an unrelated menu of options all meeting the “feasible and effective” criteria. Lastly, other applications of the SDA approach might focus on one single behavior.

At left is a pictorial representation from a Bangladesh job aid that presents a menu of small doable actions for the safe disposal of child feces by different age cohorts. In this case, all options are effective at separating child feces from the environment.

A unique feature of the WASHplus SDA approach is an emphasis on negotiating improved practices rather than focusing on educating households to adopt ideal practices



or promoting without dialogue. The process of negotiation involves a community agent, such as an outreach worker, assessing current practice, and problem solving with householders to commit to trying an improved WASH practice. This approach contrasts with common hygiene promotion methods that assume households are not practicing ideal behaviors because they are unaware, and that through awareness-raising and education, ideal practices will be catalyzed. These behaviors can be negotiated in group sessions in courtyards, in tea stalls, in clinics, at households, and other venues. Negotiation considers barriers, facilitators, social norms, and perceived outcomes from the householder point of view with the goal of getting a household to try a new practice that moves it toward the ideal. The process draws on various counseling techniques. Mali used cooking demonstrations as an integrated WASH-nutrition activity to negotiate both handwashing before preparing food and making nutritious meals for young children using foods typically available to most homes.

Small doable actions can be purely behavioral or might include hardware elements as well. WASHplus works with local government and communities to rehabilitate and install water and sanitation infrastructure but also motivates small, doable, and immediately realizable improvements by households, communities, or schools, such as stabilizing or raising sanitation platforms, hanging locally made handwashing stations, or placing ash at handwashing places. These small improvements also fall into the category of small doable actions that can improve WASH and address the environmental or supply factors influencing improved WASH.

Principle 5: Behavior-centered approaches reach to the reflexive mind responsible for habits, as well as the reflective, conscious, and deliberate mind.

The Science of Habit Formation

WASHplus is propagating new ideas and innovations for promoting health-seeking behaviors through habit theory. In 2012 WASHplus began exploring whether work on the science of habit formation could be applied to consistent and sustained handwashing improvement. It is notable that about 45 percent of human behavior can be considered habitual—actions that are repeated daily or almost daily in the same physical setting and with little or no conscious thought. The other half of our behaviors are goal-directed behaviors, actions we do in a deliberative way. The science of habit tells us that goal-directed behaviors are managed by a different part of the brain than habitual behaviors.

A possible key to sustained handwashing would be to shift control from one part of the brain to another, to have the behavior performed with little or no conscious thought. Integrating basic habit science insights from psychology, cognitive science, and behavior change research, Dr. David Neal (Neal et al 2015) worked with WASHplus to adapt his work to handwashing and identified six principles for creating greater initiation and maintenance of handwashing: ensuring a supportive environment; leveraging context and piggybacking onto

The WASHplus behavior change strategy is also built around the evidence that people can rarely go directly from their current practice to ideal practice.

The principles of habit formation illustrated here were applied to daily, scheduled group handwashing practice in WASHplus's SPLASH program in Zambia.

Six Principles of Handwashing Habit Formation

1. Ensure Supportive Environment

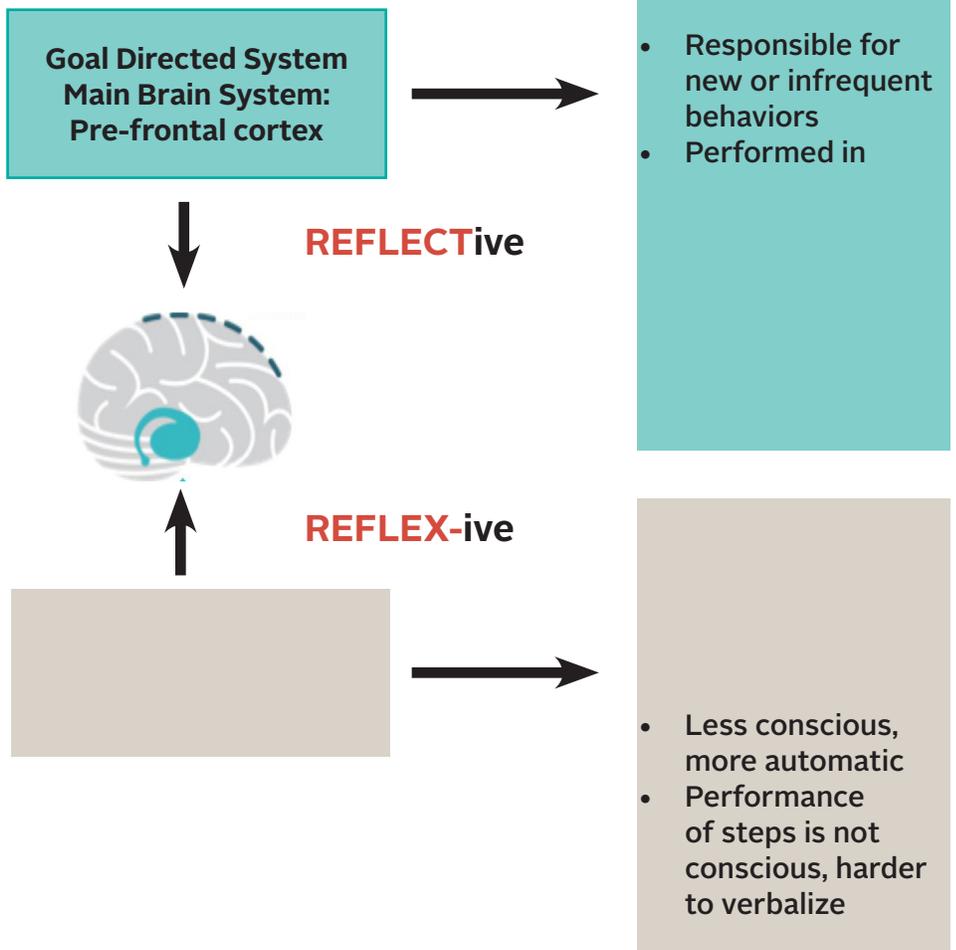
2. Leverage Context

4. Provide Ownable Cues

5. Encourage Practice

6. Promote Meaning & Motivation

Science of Habit Formation



existing behaviors; providing cues to action; eliminating friction by removing obstacles and eliminating choice; encouraging practice; and providing motivation. WASHplus first applied the principles to handwashing and then further adapted the principles as they apply to other WASH behaviors. WASHplus applied the principles of habit formation to handwashing efforts in Zambia, where schoolchildren used multiple tap handwashing stations for group handwashing each day at the same time. All six principles were incorporated to increase handwashing practice in school: Effort was eliminated (#3) by installing the enabling technology, group handwashing stations, which also ensured a supportive environment for the new behavior (#1). The daily, mandatory handwashing leveraged context by fashioning an event (#2) and creating the cueing ecosystem (#4), fostered procedural memory through the daily repetition (#5), and songs and club activities encouraged meaning-making about habit (#6). Students were encouraged to bring the practice home and share it, so handwashing at appropriate times becomes a habit that does not require conscious thought—it becomes reflexive.

Conclusions

For many years, WASHplus has focused on deliberate approaches to change and sustain WASH behavior—assessing where people are and negotiating with them to try new actions that ultimately improve their health. The greater WASH community needs to continue efforts to address key determinants for behavior change using tested and innovative approaches. The recent infusion of habit strategy into WASH behavior change work offers particular promise that still needs further testing and assessment to understand whether and how this approach can sustainably change the way people practice hygiene. With renewed country commitments to achieve the Sustainable Development Goals, to open defecation free nations, to the acknowledgment that improved WASH is essential to child nutrition and growth, the WASHplus strategic behavior-centered approach offers useful tools and methodologies to achieve success.



SMALL DOABLE ACTIONS LEAD TO BIG DOABLE ACTIONS IN ZAMBIA

The WASHplus WASH in Schools staff embraced and spread the SDA approach, promoting and teaching it to PTAs, to student-led WASH Clubs, and to school staff, especially when there was impatience with the pace of facility installation. Schools adopted SDAs to set up temporary handwashing stations, to fix up old latrines until the new ones were finished, and to devise local solutions to menstrual product needs. For example, the tailor above was hired by one school to sew reusable pads to keep stocked in the school. Ultimately, the PTAs and communities were empowered by these successful actions, and were thus encouraged to branch out once water was available to make bricks to build classrooms, teachers' houses, school kitchens, and more, all without additional external project resources.

ENDNOTES

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What is WASHplus?

The WASHplus project supports healthy households and communities by creating and delivering interventions that lead to improvements in water, sanitation, and hygiene (WASH) and household air pollution (HAP). This multi-year project (2010-2016), funded through USAID's Bureau for Global Health and led by FHI 360 in partnership with CARE and Winrock International, uses at-scale programming approaches to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under age 5 globally.

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