THE HANDWASHING HANDBOOK

GLOBAL HANDWASHING PARTNERSHIP

Dedication

We dedicate this handbook to Val Curtis who put hygiene on the map and shaped the way we understand human behavior.

Val has spent her whole life championing hygiene. In 2001, she saw the potential of bringing science, business, and policy together to promote hygiene. Through her passion, charisma and evidence-driven approach, she brought these parties together, co-founding the Public-Private Partnership for Handwashing with Soap, which then became the Global Handwashing Partnership. Her creativity and advocacy efforts led to the establishment of Global Handwashing Day and the development of countless practical handwashing tools, including the previous version of this Handwashing Handbook.

Val repeatedly broke the 'academic mould'. She is a fearless visionary, who used her research to drive real change for the world's most vulnerable populations. Val's leadership and impact on the sector has influenced the work of every frontline hygiene promoter, every national policy maker, and every line in this updated handbook – and will continue to do so for years to come.

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COVER PHOTO CREDIT: UNITED PURPOSE

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Abbreviations

ACF	Action contre la Faim
BCT	Behavior change technique
CDC	Centers for Disease Control and Prevention
CLA	Collaborating, Learning, and Adapting
CLTS	Community-led total sanitation
CSO	Civil society organization
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
HCAI	Healthcare-associated infections
IPC	Infection prevention and control
M&E	Monitoring and evaluation
NGO	Nongovernmental organization
NTD	Neglected tropical disease
P&G	Procter & Gamble
RCT	Randomized controlled trial
SNA	Social network analysis
SDG	Sustainable Development Goal
SWA	Sanitation and Water for All
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WASH	Water, sanitation, and hygiene
WASH FIT	Water and Sanitation for Health Facility Improvement Tool
WHO	World Health Organization
WSSCC	Water Supply & Sanitation Collaborative Council

Global Handwashing Partnership Partners

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Acknowledgements

This Handwashing Handbook was prepared and developed by the Global Handwashing Partnership secretariat. The secretariat would like to acknowledge the many partners who contributed to its development.

The Handwashing Handbook has emerged and developed over time. The partnership would like to acknowledge members of the working group who conceptualized and reviewed the handbook, including Janita Bartell (UNICEF), Claire Chase (World Bank), Ron Clemmer (Global Handwashing Partnership secretariat / FHI 360), Nga Nguyen (U.S. Agency for International Development [USAID]), Aarin Palomares (Global Handwashing Partnership secretariat/ FHI 360), Julia Rosenbaum (FHI 360), Elizabeth Wamera (Water Supply & Sanitation Collaborative Council [WSSCC]), and Sian White (London School of Hygiene & Tropical Medicine / COVID-19 Hygiene Hub).

Partners across all sectors provided technical expertise and authored sections of this handbook. The partnership would like to acknowledge Abby Bucuvalas (Sesame Workshop), Claire Chase (World Bank), Ron Clemmer (Global Handwashing Partnerships secretariat), Aarti Daryanani (Unilever), Lindsay Denny (Global Water 2020), Robert Dreibelbis (London School of Hygiene & Tropical Medicine), Louisa Gosling (WaterAid), Astrid Hasund Thorseth (London School of Hygiene & Tropical Medicine), Tom Heath (Action contre la Faim [ACF]), Torben Holm Larsen (Real Relief), Bosun Jang (Sesame Workshop), Alison MacIntyre (WaterAid), Priya Nath (WaterAid), David Neal (Catalyst Behavioral Sciences/Duke University), Aarin Palomares (Global Handwashing Partnership secretariat), Om Prasad Gautam (WaterAid), Virginia Roaf (Sanitation and Water for All), Julia Rosenbaum (FHI 360), Elizabeth Salvatore (Sesame Workshop), David Simnick (Soapbox Collaborative), Sam Stephens (Clean the World Foundation), James Stix (Gaia Education), Jona Toetzke (German Toilet Organization), Kristie Urich (World Vision), and Sian White (London School of Hygiene & Tropical Medicine) as authors of this handbook.

Valuable contributions were also made by Benedetta Allegranzi (WHO), Boluwatito Awe (United Purpose), Ebuwa Evbuoma (Global Handwashing Partnerships secretariat), Peter Hynes (World Vision), Dan Jones (WaterAid), Jean Lapegue (ACF), Karine Le Roch (ACF), Carolyn Moore (Global Handwashing Partnerships secretariat), Thilo Panzerbieter (German Toilet Organization), Hope Randall (PATH), Geoff Revell (HappyTap), Gretchen Thompson (FHI 360), Anthony Twyman (WHO), and Megan Williams (Splash).

This handbook was edited by Ana Hoepfner (CAWST) and Kathleen Shears (FHI 360), with design by Mike Grant (CAWST).

Foreword

The act of cleaning one's hands is so powerful, so simple, yet so difficult. With handwashing's amazing protective nature for health, the impact of handwashing also supports other Sustainable Development Goals such as education and nutrition. With all its benefits, you might expect everyone to place a great priority on handwashing. Yet, 40% of households do not have handwashing facilities at their homes and only about one-fifth of the world's population washes their hands after using the toilet. Even in institutions dedicated to health, one out of six health care facilities do not have hand hygiene stations by points of care or near toilets.

PHOTO CREDIT: FHI 360

Hand hygiene has been neglected too often, despite the benefits of hand hygiene being well known for more than 150 years. Ignaz Semmelweis, a Hungarian doctor working in Vienna, is known as the father of hand hygiene. In 1846, he discovered the connection between hand hygiene and patient survival. He promoted handwashing in hospitals in Europe, but to no avail, as handwashing was rejected by scientists and doctors at the time. A few years later, the Crimean War brought a new handwashing champion. Florence Nightingale implemented handwashing and other hygiene practices in the war hospital in Italy where she worked, achieving a reduction in infections. Sadly, the hygiene practices promoted by Nightingale were also widely ignored. In general, public health advancement of handwashing stood still for over a century. It was not until the 1980s, when a string of foodborne outbreaks and health care-associated infections led to the United States Centers for Disease Control and Prevention (CDC) identifying hand hygiene as an important way to prevent the spread of infection, heralding the first nationally endorsed hand hygiene guideline.

The current COVID-19 pandemic has placed a spotlight on the often-neglected practice like never before. Hand hygiene, whether through handwashing with soap or the use of alcohol-based handrub, is a first line of defense to contain the pandemic. The pandemic also

catalyzed collective action for the future through the **Hand Hygiene for All** Global Initiative with a vision for 2030…

"…to achieve hand hygiene for all — which ultimately means a new way of working and living, where hand hygiene is embedded not only in health systems to prevent infection, but also in our everyday lives. It means all people will have access to the supplies they need to clean their hands at critical moments — in public spaces, schools, health care facilities, workplaces and homes. It also means a fundamental shift in education, attitudes and behaviors, so that hand hygiene becomes normalized and habitual."

The global initiative is co-led by UNICEF and WHO, and the Global Handwashing Partnership is a core partner, using our platform as a global advocate and knowledge hub to support efforts for lasting change. Together, we can respond, rebuild, and reimagine to achieve the vision of universal hand hygiene.

For universal hand hygiene to become a reality, each of us has a role to play. We call on *everyone*—no matter what your work is, how old you are, or where you live—to join us as we collectively move forward in advancing handwashing with soap and all of its benefits for health and wellbeing. We can all be handwashing heroes to promote handwashing at home, schools, health care facilities, workplaces, and throughout our communities. The Handwashing Handbook contains learnings of our partners who comprise the Global Handwashing Partnership. This resource offers insights of best and promising practices to support your work promoting handwashing—to support your journey as a handwashing hero.

All the best for clean hands!

Ron Clemmer
Global Handwashing Partnership

PHOTO CREDIT: WORLD VISION

GLOBAL HANDWASHING PARTNERSHIP

CHAPTER 1

Introduction

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PHOTO CREDIT: UNICEF

Purpose of This Handbook

This handbook is based on the experience of the Global Handwashing Partnership and presents best practices and new concepts to improve the uptake of handwashing. This handbook updates the approaches shared in the previous Handwashing Handbook, which was published in 2005 by the World Bank with support from the partners of the Global Public-Private Partnership for Handwashing (PPPHW), the original name of the Global Handwashing Partnership.

Handwashing has been established as a component to achieve proper hand hygiene and a range of health and development objectives. Since the publication of the previous Handwashing Handbook, which focused on national handwashing programs, efforts have shifted to addressing handwashing at all levels. Since then, practitioners have moved from implementing freestanding campaigns toward a greater focus on advocacy and more integrated programming. The many key learnings from those experiences in scaling up handwashing include the need to create an enabling environment, the need to ensure long-lasting handwashing habits through appropriate behavior change approaches, and the need to go beyond communities, moving into other settings such as healthcare facilities and workplaces.

The Handwashing Handbook aims to equip handwashing champions in government, civil society, private sector, and nongovernmental organizations (NGOs) with resources and tools. Equipped with these resources, handwashing champions can strengthen local systems to support handwashing, and use these tools for planning and implementing successful programs to change handwashing behavior in a variety of contexts. It is based on evidence that reflects the collective expertise of the Global Handwashing Partnership and aims to share lessons learned with a global network of handwashing champions. The Global Handwashing Partnership encourages a collaborative approach to handwashing programming and believes that actors from all sectors have a role to play in the advancement of hand hygiene uptake.

About the Global Handwashing Partnership

The Global Handwashing Partnership was formed in 2001, as government, private sector, multilateral organization, and NGO partners saw an opportunity to advance handwashing with soap through programs and policies. Global Handwashing Partnership's work is built on the foundation of the Central

American Handwashing for Diarrheal Disease Prevention Program, which demonstrated that large-scale programs with public and private sector involvement can be successful in promoting handwashing and reducing disease. A significant success of the Partnership has been launching and sustaining Global Handwashing Day to spread global awareness around the importance of handwashing with soap. Additionally, the Partnership was instrumental in advocating for the inclusion of a handwashing target under the Sustainable Development Goals. The Global Handwashing Partnership also serves as a knowledge hub to share best practices and as an advocate for handwashing on a worldwide scale. Learn more at globalhandwashing.org.

What's in This Handbook?

This handbook is divided into chapters, described below:

Making the Case for Handwashing

This chapter provides the foundation for the prioritization of handwashing programming. To achieve success, handwashing programs must have the support of key stakeholders. Governments, businesses, donors, and other actors can offer unique skills and resources that are necessary to ensure the success of a handwashing program. Topics covered in this chapter range from cost-effectiveness to the benefits of integrating hand hygiene into education and other programs, all of which provide a solid foundation for inclusion of handwashing in a range of different programs.

Designing and Implementing Handwashing Programs

This chapter discusses how to motivate and sustain handwashing as a habit. Behavior change strategies are needed to design and implement initiatives that trigger and maintain handwashing practice. This means putting the desires and needs of the target audience at the center and having their perspectives influence the nature and scope of activities. Formative research can help program planners identify the key factors influencing handwashing for the specific audiences.

Improving Handwashing in Specific Contexts

This chapter examines handwashing program activities across a variety of different contexts. Different approaches for handwashing interventions are needed for schools, healthcare facilities, workplaces, markets, and other public settings. Another element of the context is integration into other types of programs, such as early child development and nutrition. Each situation has its own conditions, both enabling or hindering the practice of handwashing, and these conditions must be considered to ensure context-specific, appropriate approaches.

Addressing Handwashing at a Systems Level

This chapter describes a systems-level approach to handwashing. Catalyzing a widespread increase in handwashing requires a strong enabling environment to ensure that the practice of handwashing and its resulting benefits can be sustained. Addressing handwashing at a systems level requires consideration of the multiple actors and inter-relational elements needed to support sustainable handwashing outcomes.

Throughout the handbook, learnings, case studies, and tools are provided to support planning and implementation of handwashing programs. Users of the handbook are encouraged to combine these learnings with their own creativity and knowledge to innovate and optimize the approaches discussed to improve at-scale handwashing interventions.

CHAPTER 2

Making the Case for Handwashing

PHOTO CREDIT: LSHTM

2 Making the Case for Handwashing

Proper hand hygiene is one of the most effective ways to prevent infection and limit the spread of diseases, such as respiratory infections, diarrheal disease, outbreak-related pathogens (such as cholera and Ebola), neglected tropical diseases, and healthcare-associated infections. Hand hygiene is a primary measure of health and development, and practices include handwashing with soap and use of alcohol-based handrub.

DEFINITION

Hand Hygiene vs. Handwashing

The terms hand hygiene and handwashing have often been used interchangeably; however, hand hygiene represents the broader range of hand cleaning or disinfecting actions, while handwashing is a specific hand hygiene practice.

Hand hygiene is any action of hand cleaning and disinfecting, including handwashing with soap and the use of alcohol-based hand rub. Proper hand hygiene should be the overarching goal. Hand hygiene practices decrease the presence of microorganisms on hands or kill the microorganisms, thus reducing the risk of infection and improving health and wellbeing outcomes.

Handwashing with soap is a specific action of hand hygiene that involves the use of soap and water to physically remove dirt, organic material, and microorganisms from hands.

For this handbook, handwashing is the key focus, with the overall goal of ensuring proper hand hygiene.

The simple act of handwashing has the potential to avert preventable deaths, improve healthcare outcomes, and bolster progress in education, equity, and water, sanitation, and hygiene (WASH) to achieve the Sustainable Development Goals (SDGs). While handwashing access is measured as part of SDG Target 6.2, the impact of good handwashing behavior cuts across the SDG agenda. For example, handwashing supports efforts to improve education outcomes by reducing the number of school days missed and preventing diseases that hinder critical child development *(WHO, UNICEF, World Bank Group, 2018; USAID, 2018a)*.

National averages of access to basic handwashing facilities in households range from below 10% to nearly 100% in countries across the world *(World Health Organization [WHO] & UNICEF, 2017)*. Even when facilities and supplies are available, handwashing is not practiced as consistently or as thoroughly as needed. Globally, it is estimated that only 19% of people wash their hands after contact with excreta *(Freeman et al., 2014)*. Failure to incorporate handwashing into water and sanitation programs could dramatically limit the health impact of such investments,

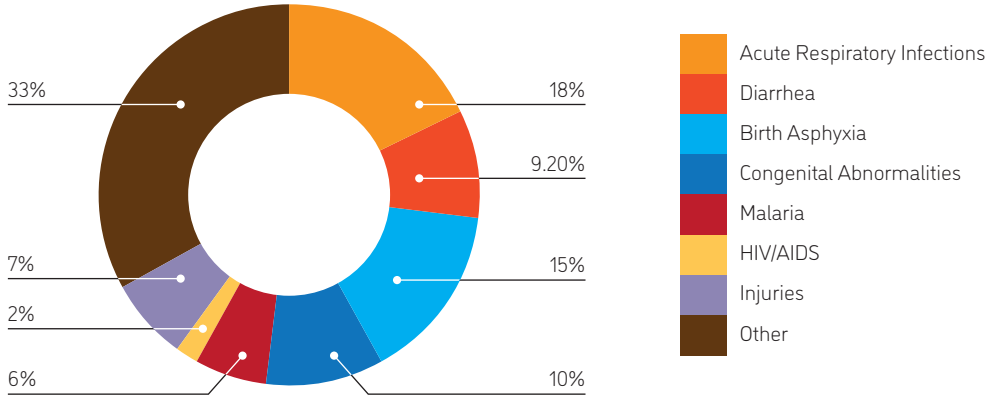
and failure to include handwashing in other programs limits their achievement of their overall goals.

Current investments and efforts to improve hygiene are insufficient to achieve the SDGs. Lack of handwashing infrastructure and soap are recognized challenges *(Mwachiro, 2014; Kamm et al., 2014)*. With the exception of responses to outbreaks of disease, such as Ebola or coronavirus, few programs focus on hand hygiene as a central issue. Within integrated programs, hand hygiene often receives limited focus. Therefore, the need to champion hand hygiene at policy, program, and community levels continues. Making the case for handwashing requires a clear understanding of handwashing benefits and what drives the case for investment.

QUICK FACTS

- **Only 19% of people worldwide wash their hands after contact with feces.**
- **One in six healthcare facilities have no hand hygiene facilities at points of care and near toilets.**
- **Handwashing with soap can prevent up to half of diarrheal episodes and acute respiratory infections.**
- **Handwashing with soap can have as much as a 92-fold return on investment.**

Figure 1: Distribution of Global Child Deaths by Cause *(WHO, 2019a)*



Handwashing with Soap as a Preventive Measure

Handwashing with soap can dramatically reduce the spread of disease, particularly acute respiratory infections and diarrhea, two of the leading causes of child death (see **Figure 1**). Despite significant progress, child survival remains a critical issue: more than five million children younger than five died in 2018 from these causes *(WHO, 2019a)*.

Research suggests that handwashing with soap can reduce diarrheal episodes by 28 to 47% and can reduce acute respiratory infections, such as pneumonia, by 20 to 50% *(Ejemot-Nwadirao et al., 2015; Curtis & Cairncross, 2003; Rabie & Curtis, 2006; Ejemot et al., 2008; Townsend, Greenland, & Curtis, 2017; Luby et al., 2005)*. Handwashing can also limit disease outbreaks, such as cholera and Ebola, and reduce healthcare-associated infections by more than 50% *(WHO, 2018a)*.

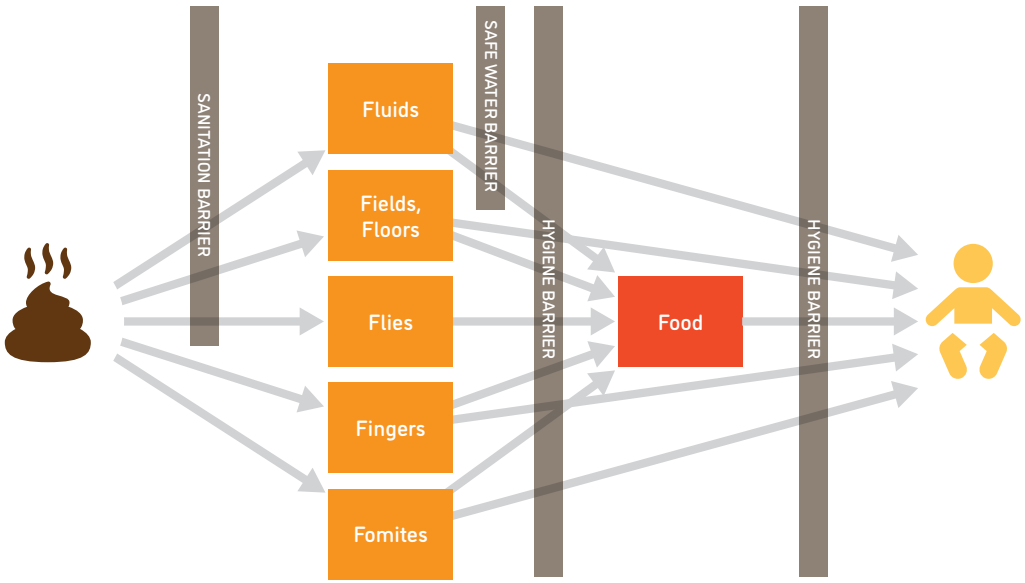
Handwashing interrupts the transmission of disease-causing pathogens. For example, it can provide a barrier in the fecal-oral route of exposure to pathogens contained in human feces, the main source of diarrheal diseases such as typhoid, cholera, and gastroenteric infections. One gram of human feces can contain 10 million viruses and 1 million bacteria *(Majorin et al., 2014)*.

The "F-diagram" (see **Figure 2**), which summarizes the routes of fecal pathogen transmission, identifies handwashing as one of the major barriers for interrupting the routes of fecal pathogen transmission *(Wagner & Lanoix, 1958; Penakalapati et al., 2017)*. Cutting these routes of transmission is key to preventing diarrheal disease.

Even in areas that are highly contaminated and have poor sanitation, handwashing with soap makes it possible to limit the transmission of various pathogens.

People should wash their hands with soap after using the toilet, after cleaning a child's bottom (or any other contact with excreta), and before any contact with food, such as eating, preparing food, and feeding others. Children and adults should also wash their hands after playing or working outside and after touching animals. Certain pathogens merit additional occasions for handwashing. For example, it is important to wash hands before visiting older adults to prevent the spread of COVID-19. Alcohol-based handrub (hand sanitizer) can be used if soap and water are not available; however, handrub is less efficacious than handwashing with soap *(Blaney et al., 2011; Grayson et al., 2009; Oughton et al., 2009)*.

Figure 2: The F-Diagram: Major Transmission Routes of Fecal-Oral Diseases



"One gram of human feces can contain 10 million viruses and 1 million bacteria"

The Challenge of Handwashing Adoption

If handwashing with soap is so important, why doesn't everyone do it? Organizations and government agencies have been promoting handwashing for decades, providing soap, building handwashing infrastructure, and conducting handwashing training. Yet, rates of handwashing with soap are still extremely low, as indicated in **Table 1.**

Table 1: Observed Handwashing Behaviors Around the World *(Freeman et al., 2014)*

Region	Prevalence of Handwashing After Contact with Feces (%)
Africa	14
Americas (High-income)	49
Americas (Low-income)	16
Europe (High-income)	44
Europe (Low-income)	15
Southeast Asia	17
World	19

So, what has been missing in handwashing programs? Changes at the individual, household, community, institutional, and system levels are required for at-scale improvement of handwashing. In addition, infrastructure, facilities, and markets must be readily available.

Often, even when people have access to soap and water and understand the importance of handwashing with soap, proper handwashing is not practiced. The frequency with which handwashing should be practiced requires habitual behavior change at various times. Handwashing programs face the following key challenges to achieving that change:

It takes time. Most community members know why, when, and how to wash their hands. Something else—habitual behavior—gets in the way of that ideal. It takes time to explore and understand the factors that influence handwashing behavior for a target group, and it takes time to design interventions that will effectively address those key factors. Many handwashing promotion programs lead to short-term changes in behavior, but after a while, handwashing rates may begin to decline. This can happen because behavior is dynamic. Over time, the key factors must be reassessed and redesigned accordingly.

It needs flexible funding. Traditional input-to-output funding models do not always work well to address human behavior. Handwashing interventions need flexible funding that allows for failure, learning, and iteration.

It needs to be prioritized. Handwashing improvement is an important element in WASH, health, nutrition, education, and other sectors. While handwashing is an aspect of many programs, it is often not the main focus. Changing handwashing behavior can be complex, and appropriate prioritization of handwashing interventions is necessary.

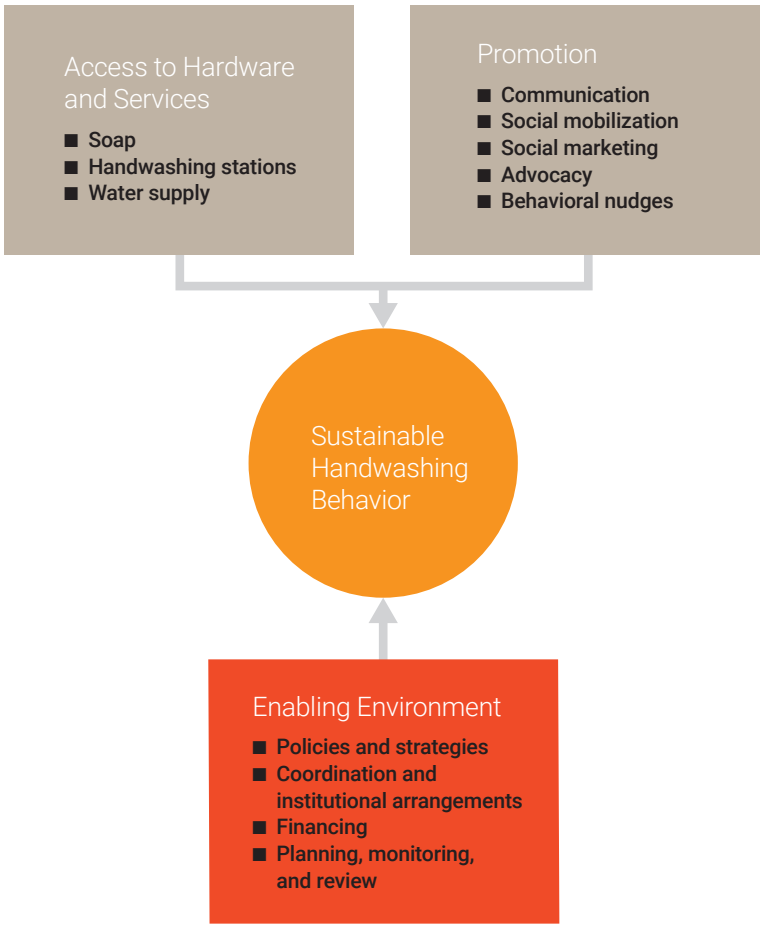
It takes dedicated expertise. Often, implementing organizations neglect to ensure staff have the proper tools and capacity in social and behavior change to implement effective behavior change programs. Time, support, and resources are needed to build staff capacity to apply behavior change principles in program design and implementation. The time and financial investment required to do so are often not budgeted for and are therefore out of a program's scope.

It is difficult to measure. Effective measurement of community-level changes in handwashing behavior is still difficult.

Program implementers have typically relied on self-reports of behavior and observation of the presence of handwashing facilities and soap and water, as well as different proxy measures, but these mechanisms do not provide an accurate picture of actual practice. Data collected through observation can also be biased because people may change their behavior if they are aware that they are being observed. Investing time and resources into quality monitoring and evaluation for handwashing is critical. Innovation may also be needed to design low-cost, reliable ways to measure handwashing behavior. Furthermore, qualitative and quantitative monitoring of the ongoing project can provide learnings to optimize future programs and support adaptive management to adjust the current handwashing program, though though these project adjustments are not always done.

It takes a multi-faceted approach. It is useful to use a framework that sets out the need for a multi-faceted approach to handwashing behavior to address the above challenges. One approach is the Hygiene Improvement Framework (see **Figure 3**), which can be used to guide planning, implementation, and evaluation of handwashing initiatives. The Hygiene Improvement Framework

Figure 3: Hygiene Improvement Framework *(WASHplus, 2016a)*



suggests that access to hardware and services (handwashing facilities), promotion (communication, marketing, and social mobilization), and an enabling environment (financing, policy improvement, capacity building, and partnerships) must all be in place to most effectively improve and sustain handwashing practice.

Implementers should consider the role of access to supplies such as soap and water in creating better conditions for proper hand hygiene. Often *do-it-yourself* or low-cost handwashing facilities can be effective in increasing access in the short-term, but families soon abandon both the facilities and handwashing practice because the facilities are not convenient or easy to use. For longer-term impact, it is critically important to work with local partners to address gaps in the supply chain for aspirational handwashing facilities and to promote more desirable *"do-it-yourself"* facilities *(IDS, 2020; UNICEF, 2020)*. Likewise, it is important to ensure inspirational communication programming that addresses emotional factors that can influence handwashing, as well as nudges, which help create subconscious habits of handwashing. Strengthening the enabling environment, such as developing national hand hygiene roadmaps and mobilizing in-country resources, should also be pursued if appropriate to facilitate and encourage handwashing.

To ensure handwashing is included as a focus in programs, handwashing advocates must make the case to stakeholders, including government, private sector, and funding partners.

Making the Case Within Government

Key drivers of government interest include cost-effectiveness, the scale of health issues, and links to targets such as the SDGs. The increased burden of communicable diseases among populations due to poor hygiene practices remains a major concern on the public health agenda, especially in developing countries. Governments must ensure that clean, accessible, and affordable water and sanitation services are available and must prioritize handwashing as a component of good health.

Often, water and sanitation programs are attractive to governments because they involve the purchase and installation of hardware. This is because people can physically see the government's impact in their communities. However, it can be difficult to make the case for the funding of a software issue. This is because the impact is more visible for infrastructure (hardware) versus behavior change (software). While handwashing has historically been perceived as a software issue, it is important to note that improving handwashing requires both hardware and software, with an important role for government to enable access to handwashing infrastructure and products (hardware) in public settings and to coordinate handwashing behavior change efforts (software) nationally.

TIP

Use relevant information

Use the latest country-specific information on deaths caused by diarrheal disease and respiratory infections to build the case for handwashing. Data can be found through the Institute for Health Metrics and Evaluation Country Profiles or through the latest GLAAS report. Highlighting how a country is faring against others in terms of policy and financing for hand hygiene can be key to influencing national plans.

Investigations of the economic and societal effects of handwashing, such as reductions in poverty, medical treatment costs, and lost productivity, can help advocates encourage government decision-makers to support handwashing through programs, strategies, and budgets. The possible return on investment for handwashing through avoided healthcare costs and prevention of productivity loss can make a convincing case for significant government investment in handwashing programs.

Though some international organizations and governments are starting to increase investments in hygiene, handwashing is still underrecognized in country-level policies, plans, and activities. Thus, advocacy efforts for handwashing must be made at every strategic opportunity.

"To ensure handwashing is included as a focus in programs, handwashing advocates must make the case to stakeholders, including government, private sector, and funding partners."

RESEARCH FINDINGS

PHOTO CREDIT: CAWST

Assessing the Economic Impact of Hand Hygiene Promotion

Hygiene, sanitation, and health investments focused on hand hygiene are among the most cost-effective investments that can be made with public and private resources. While interventions to improve hand hygiene across a country or facility may require significant financial and human resources, the return on investment is high considering the anticipated reduction in costs for healthcare-associated infections (HCAIs) and prevented loss of productivity *(WHO, 2009a)*. Studies showing this return on investment include the following examples:

- Townsend, Greenland & Curtis (2017) estimated national costs in India and China related to diarrhea and acute respiratory infections attributed to the lack of handwashing with soap after contact with feces. Additionally, they examined the costs and benefits of handwashing behavior change programs using disability-adjusted life years. Expected net returns of a national behavior change program showed a 35-fold return on investment in China (net annual return of US$2.64 billion) and 92-fold return on investment in India (net annual return of US$5.64 billion).
- Thu et al. (2015) completed a study before and after a hand hygiene promotion program in intensive care and critical care units of large tertiary hospitals in Vietnam that determined hand hygiene compliance, incidence of HCAIs, and associated costs. The program cost was US$6.50 per patient and saved US$1,074 for every HCAI prevented. Even for scenarios with a lower rate of HCAIs than the actual observed rate, the handwashing intervention was projected to have a positive return on investment.
- An evaluation of the cost-effectiveness of the Australian National Hand Hygiene Initiative in 38 of the country's largest hospitals found varying levels of return on investment across the different states and territories. Overall, this hand hygiene program proved cost-effective, with a cost of AU$29,700 per year of life gained due to HCAI prevention *(Graves et al., 2016)*.

Making the Case Within the Private Sector

As the private sector moves to focus on stakeholders rather than just shareholders, businesses should play even more of a key role in promoting handwashing. Companies can affect meaningful change in multiple ways: by focusing on their immediate sphere of influence among their staff and areas of work, through broader activities linked to corporate social responsibility, and through their business supply chain if they are involved in handwashing facilities or products. That is, companies can benefit communities through corporate social responsibility handwashing programs and companies can improve their workforce productivity through handwashing programs that target their staff and their families. Finding the value-add of handwashing improvement activities and aligning the issue with a company's overall social responsibility goals is critical to ensuring the support of a company for handwashing programs on a larger scale. When companies have a handwashing product business line, handwashing promotion programs offer the opportunity of extra synergies through investment of their time, expertise, and resources in handwashing programs, providing an indirect route to a potential increase in profits.

Multinational corporations may see a wider benefit of participating in a public-private partnership (PPP) to support handwashing. Involving the international headquarters of a company can help drive country-level investment. It is possible to unlock financial resources through co-branding opportunities by splitting off specific activities of a national handwashing program for co-branding with a specific company. For example, one company may support a school handwashing program in a country, while another company may support handwashing programs for maternity hospitals, all as part of a coordinated nationwide handwashing program.

Companies also have an opportunity to promote handwashing within their workforces, with the possibility to reduce the spread of germs, reduce absenteeism and medical costs, and boost the overall productivity of the company. A healthy workforce and clean working environment can save the company both time and money. During a disease outbreak, such as the COVID-19 pandemic, support for hand hygiene among a company's workforce is more important than ever to maintain productivity.

Examples of several of the Global Handwashing Partnership private sector partners' efforts to support handwashing is included in the case studies on the following page.

TIP

Speak their language

Whenever possible, use examples, research, or stories from the context most familiar to a company. For example, aligning handwashing goals with a company's overall goals or highlighting the positive impact on their workforce productivity can be key to private sector engagement. Avoid technical jargon, so the message is clear.

PHOTO CREDIT: UNILEVER

Handwashing at school helps to create life-long habits

CASE STUDIES

Private sector handwashing activities

The private sector engages in global handwashing scale-up, often leveraging country handwashing initiatives and handwashing messages to expand the visibility of soap and hygiene brands. Examples of the private sector's commitment to handwashing activities include the following:

Colgate-Palmolive

In the context of COVID-19, the Colgate-Palmolive Company identified the need to empower people to take their health into their own hands, by teaching proper handwashing techniques and providing soap to millions in need. Colgate quickly mobilized five of its manufacturing plants to produce 25 million bars of specifically made soap. The packaging of this soap functions as an educational device, featuring proper handwashing instructions and easy-to-follow visuals to overcome language barriers. The soap bars were distributed by Colgate's network of partners to communities in 28 countries. Colgate-Palmolive also donated an additional $20 million in health and hygiene products. Colgate repurposed its nine US-based *Bright Smiles, Bright Futures* mobile dental vans to distribute health and hygiene products. The vans distributed 1.4 million bars of soap, as well as other hygiene products, to school districts and food banks.

Essity

Essity, a leading global hygiene and health company, is working with children in primary schools across the United States through its *Handwashing Works!* program. The program provides handwashing tools to educators, including lesson plans and in-class activities, to promote handwashing among students. The program's pilot, which was launched in 2018, observed a nearly 45% increase in students' quality of handwashing based upon a scoring system of steps and length of handwashing. Through its Tork brand, Essity has also developed toolkits to promote hand hygiene in kindergartens and schools with a free handwashing app (Ella's Handwashing Adventure, available for free on iOS and Android devices) and Max's Handwashing School, a hand hygiene educational package. With the *Tork Clean Care* program, Essity offers various handwashing and hygiene tools for work environments, including health care, food services, government, groceries/pharmacies, manufacturing facilities, educational institutions, and office buildings. For example, the Tork VR Hand Hygiene app is a free educational tool for hand hygiene among health care workers.

Proctor & Gamble

P&G has a long history of promoting handwashing across countries and within their own workforce. Through its Safeguard brand, P&G developed an educational, health-focused program in China aimed at reducing the number of children who suffer from disease. The program teaches children healthy handwashing habits through a series of interactive games and activities. Since the program's inception in 2007, it has reached over 72 million children with handwashing messages that aim to establish good handwashing habits at a young age (P&G, n.d.). During the COVID-19 pandemic, P&G has also provided monetary and product donations to affected areas such as Wuhan, Huanggang, Shiyan, and Huangshi. As part of its COVID-19 response, P&G has also committed US$10 million for hygiene education and product donation to promote handwashing habits among kids in underserved communities in the United States. This new initiative will help reach an estimated 48 million kids under the age of 12. P&G also takes pride in promoting handwashing within its own workforce, providing handwashing guidance and instructions to all employees.

Unilever

Through its Lifebuoy brand, Unilever is working to scale up more integrated handwashing programs with partners. Thus far, Lifebuoy has reached 17 million people in rural Pakistan and Bangladesh through its flagship program, *School of 5*, increasing handwashing knowledge by 33% and handwashing practice by 43%. Lifebuoy also launched an innovative partnership with the Global Vaccine Alliance (GAVI) in 2017 to protect children under 5 from illnesses and premature death by promoting handwashing with soap and immunization together. This GAVI–Unilever collaboration is an example of a partnership that used the combined expertise of both organizations to help prevent millions of unnecessary child deaths through integrated programming (Unilever, 2019). To respond to the COVID-19 pandemic, Unilever partnered with the United Kingdom's Department for International Development (DFID) to target 1 billion people through Hygiene Behavior Change Coalition handwashing programs.

PHOTO CREDIT: GLOBAL WATER 2020

Handwashing in healthcare facilities requires commitment and funding

Making the Case to Funders

Making the case for handwashing to funders, such as charities, private foundations, and bilateral and multilateral agencies, is similar to advocating for government support. Funders are interested in maximizing the return on their investment of scarce resources, and will want to know the latest evidence on the costs and related effects that can be expected from handwashing approaches (see **Research Findings under Making the Case Within Government**). Funders will also want to understand where the greatest needs are in a country, and the overall gap for meeting defined handwashing impact targets.

To obtain donor support, it is important to determine donors' priorities. Consider where decision-making lies, the mechanisms for obtaining funding (grants, loans, cooperative agreements, or contracts), and the timeline and process for doing so. Increasingly, funds are distributed at country level, but advocating for handwashing may require efforts in both the host country and the donor's country. Donors are increasingly attracted to programs that can leverage various sources of financing, whether from public, private, or other sources, for interventions and programs.

Multilateral agencies, such as UNICEF, that mainly provide grant funding, have programs that can support handwashing at country level. Development banks such as The World Bank have lending programs for water and sanitation, early child development, and nutrition that may specify expenditure on hygiene promotion and infrastructure.

"Donors are increasingly attracted to programs that can leverage various sources of financing, whether from public, private, or other sources, for interventions and programs."

TIP

Proposal Writing

When developing a proposal for a funder, consider the following tips:

Identify the proposal requirements of the donor.

Most donors have standardized formats or criteria for receiving proposals. Before starting the process, ensure these requirements are understood.

Understand donor priorities.

Take time to read the donor's website to understand the types of programs they have funded previously, as well as their priority funding themes, priority countries, and their overall aim or mission. If submitting a proposal to a competitive funding call, be sure to understand the aims and constraints of that particular funding call. If the donor has not previously funded hygiene programs, a stronger case for the public health impact and cost-effectiveness of the program may be needed. In all hygiene behavior change proposals, make sure to define the behavioral challenge within a given context.

Program design is not a one-person job.

Pull together a small team to develop the proposal. This could include people at different levels within an organization. For example, it is useful to have individuals who are familiar with the realities of working in the setting where the program will be delivered. Likewise, it may be useful to include staff based within headquarters who may have a broader understanding of successful approaches for handwashing behavior change. It can also be useful to involve staff who are familiar with developing budgets and monitoring and evaluation plans.

Follow a systematic process for program design and document this in the proposal.

Use the proposal writing process to explain how the program will be developed and highlight some key insights to justify design choices. Include an options appraisal which lists potential courses of action against a set of criteria (e.g. evidence of effectiveness, cost, feasibility, political will) to demonstrate why the proposed approach is likely to be best suited to the setting.

Include a theory of change.

Theories of change show how planned activities will lead to predicted outputs, contributing to the desired objectives and goal of the program. Setting this out for the donor is another way of justifying the inputs and program components that are being requested.

Be iterative and flexible.

While program design should be systematic, it is not a linear process. It is likely that the initial plan may need to be adjusted to fit within the permissible budget, to be feasible within the given time period, or to allow for unforeseen risks and security challenges.

PHOTO CREDIT: ISTOCK

Making the Case for Integrating Handwashing Into Other Initiatives

Handwashing interventions are often a part of water, sanitation and hygiene (WASH) programming, with hygiene being an integral part of WASH programming. Even in WASH programs, the case must be made for adequate priority being given to handwashing, as water has typically received the greatest focus, followed by a focus on sanitation, with these two interventions receiving the vast majority of the budget, time—and consequently—the priority. Catalyzing the habit of handwashing, rather than short-term adoption of handwashing facilities, requires considerable time and effort, as well as expertise to implement best practices. Handwashing cannot be sold short and expect the maximum impact of WASH programming.

Moving beyond WASH and integrating handwashing interventions with other related initiatives should be a high priority. Because handwashing has cross-cutting effects and is a behavior that is emphasized for infection and prevention control, safe preparation of food and feeding of children, child health, and prevention of disease outbreaks, it merits greater emphasis in programs than what it often receives. One of the many examples for such integration can be found in education. Handwashing facilities as a part of WASH-friendly schools, with WASH education and behavior change along with water and sanitation facilities, have been shown to result in a marked improvement in school attendance and teacher-pupil interaction time *(WASHplus, 2016b)*. Another example for integration comes from a professional procedure context, where handwashing is at the nexus of infection prevention and control measures and better health outcomes in healthcare facilities. Yet, recent global estimates suggest that one in six health care facilities lack hand hygiene facilities at both points of care and near toilets *(WHO & UNICEF, 2019)*. Interventions that promote sustainable changes in handwashing behavior in health care facilities can prevent health care-associated infections and other diseases *(Brearley, Eggers, Steinglass, & Vandelaer, 2013; Rabie & Curtis, 2006; Darmstadt et al., 2005; Gautam et al., 2017)*.

Many projects and programs integrate handwashing into other programming to leverage the programming for maximum impact. However, while integrating handwashing into related programs can maximize the benefits, this leveraged impact has often been a missed opportunity. The benefits of integrating handwashing into education, health, early childhood development, nutrition, and equity and inclusion programs, as well as examples of approaches of integration into these programs, can be found in **Chapter 4: Improving Handwashing in Specific Contexts.**

Chapter Takeaways and Resources

Handwashing is a simple, cost-efficient practice that can greatly improve public health and support a range of development goals. In fact, handwashing is vital to implementing comprehensive, integrated programs to address many health and development issues.

Key Takeaways

- **Handwashing is a simple yet neglected practice.** Although handwashing is an easy, effective way to avert preventable deaths and ensure good health, handwashing rates around the world are far below where they should be. To be most successful, health and development efforts must include strategies to promote and facilitate handwashing.

- **Different groups will have different motivations to promote handwashing.** It is important to understand the perceived benefits of investing in handwashing for different stakeholders. Determine the value added by handwashing investments and incorporate it into advocacy messages to governments, private sector, funders, and other relevant actors.
- **Addressing handwashing practice requires multiple stakeholders.** Governments play an important role in prioritizing handwashing in national policies, while the private sector, NGOs, and civil society can provide insights on how to incorporate handwashing into specific activities and contexts.
- **Handwashing benefits are cross-cutting.** It is feasible, acceptable, and appropriate to integrate handwashing initiatives into programs focused on goals beyond proper hand hygiene. Policy makers and implementers alike must look toward investing in more integrated handwashing programming to ensure better health, nutrition, education, and economic outcomes.

Additional Resources for Making the Case for Handwashing

- **Global Handwashing Partnership.** Clean Hands for All: A Toolkit for Hygiene Advocacy. This advocacy toolkit equips hand hygiene champions with tools and resources for integrating handwashing messaging into new or existing campaigns or programs.
- **Global Handwashing Partnership.** Global Handwashing Partnership Resource Hub. This resource hub offers a range of handwashing resources and materials for handwashing advocacy.
- **Global Handwashing Partnership.** Hand Hygiene in Health Care: Advocacy Pack. This advocacy pack equips champions with templates and messages to advocate for hand hygiene in healthcare settings.
- **Global Handwashing Partnership.** Handwashing – Vital for Sustainable Development. This brief provides key statistics and discusses the investment case for handwashing with soap as it relates to the Sustainable Development Goals.
- **Centers for Disease Control and Prevention.** Life is Better with Clean Hands Promotion Toolkit. This toolkit provides promotion and outreach suggestions, as well as sample social media messages and other online campaign materials that can be used to make the case for handwashing to specific audiences.
- **Essity.** Clean Hands at the Heart of Your Business. This infographic explains why hand hygiene should be at the heart of businesses.
- **Unilever/Lifebuoy.** Healthy Handwashing Habits for Life. This page has a range of case studies, materials, and approaches to promote handwashing through advocacy and partnerships.

CHAPTER 3

Designing and Implementing Handwashing Programs

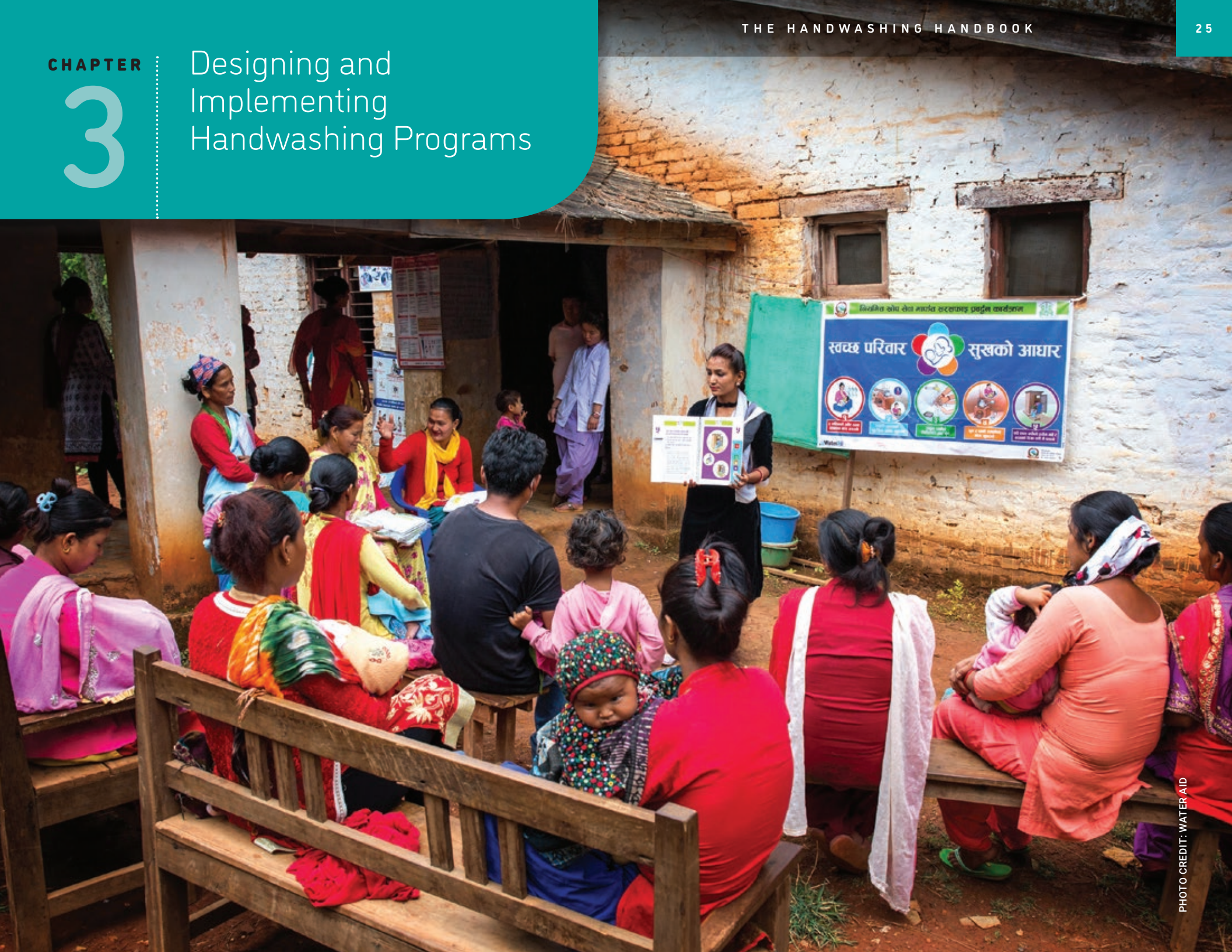


PHOTO CREDIT: WATERAID

3 Designing and Implementing Handwashing Programs

PHOTO CREDIT: SPATAP

Catalyzing handwashing behavior change requires designing and implementing interventions to motivate and sustain handwashing as a habit. This chapter draws on decades of research and program experience in social and behavior change, recognizing the need to understand the target audience and key factors influencing handwashing behavior, often called behavioral determinants. Despite the act's simplicity, efforts to improve handwashing can be complex.

Improving handwashing is not a one-time activity, rather it is a practice that must be supported, reinforced, and mainstreamed as a critical behavior that should be practiced multiple times every day. Proper design of handwashing programs takes time, resources, effort, and commitment. Programs must address the various key determinants for handwashing among different audiences and contexts, and new research is often, but not always, needed to identify the key determinants for the target audience. Behavioral nudges are also powerful tools to increase the habit of handwashing, if effectively targeted. Designing a handwashing program is not quick and easy, but design efforts will pay off in improved impact during implementation.

The Shift in Behavior Change Approaches

Early handwashing promotion typically involved teaching populations about disease transmission under the assumption that if people were better informed, they would take protective action based on their increased knowledge. However, such approaches had minimal success (*Clayton et al. 2003; Biran et al. 2009; Scott & Herbold, 2010; Contzen et al., 2015)*. Reasons suggested for this lack of success include that knowledge about hand hygiene and disease transmission was already high in most contexts *(Curtis et al., 2009; Rabbi & Dey, 2013)* and awareness of biomedical facts appears to be a weak determinant for routine behaviors such as handwashing with soap *(Clayton et al., 2003; Biran et al., 2009; Scott & Herbold, 2010; Contzen et al., 2015)*.

Such realizations caused handwashing researchers and practitioners to engage the skills of social marketing agencies and health psychologists. They shifted the focus away from what those in the WASH sector thought would change behavior to focusing on the opinions, priorities, and needs of the target audiences. Increasingly, programs incorporated a learning phase prior to program design (often described as formative research) to gain a better understanding of the barriers to and enablers of behavior within a specific context *(Biran et al., 2005; Scott et al., 2007; Curtis et al., 2009; Greenland et al., 2013; Xuan et al., 2013; Rahman et al., 2017)*. This shift has led to handwashing program

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designs that address a range of behavioral determinants through multiple interactions with communities and a variety of delivery channels to change behavior *(Greenland et al., 2017; White, Hasund Thorseth, Dreibelbis, & Curtis, 2020)*

With growing evidence that hand hygiene knowledge is necessary but not sufficient to trigger handwashing, program planners widened the lens to identify the most important behavioral determinants influencing handwashing. Attention then turned to the role of access to necessary supplies, such as water and soap. Because running water is often not available or easily accessed in many resource-poor countries, innovators developed do-it-yourself, low-cost handwashing facilities. The limited data available on the effectiveness of such technologies indicate that they may improve handwashing behavior initially *(Zhang et al. 2013; Biran, 2011; Husain et al., 2015)*. However, when WASH promotion programs end, communities often end up with a "graveyard" of dysfunctional *do-it-yourself* handwashing stations *(Mbakaya, Kalembo, & Zgambo, 2020)*. This happens because the products lack many of the features considered desirable in a handwashing station, and because of a lack of focus on providing inspirational programming for real behavior change *(Devine, 2010)*.

Leaders can be important influencers for handwashing

Using Behavior Change Frameworks

Navigating the broad range of behavior change approaches and understanding the similarities and differences among them can be a challenge for practitioners. **Table 2** summarizes characteristics of some behavior change approaches that have been used to design programs to change handwashing behavior. These frameworks or approaches offer systematic ways to address an otherwise complex design challenge.

Although the terminology and methods used vary, the process for designing behavior change interventions is relatively similar across these frameworks. Most approaches recommend an initial assessment that typically involves program designers gathering existing knowledge about the target behaviors, audience, and context. Deeper insights are then gathered by carrying out small-scale research or learning among the target population to assess what the key behavioral determinants are for that target audience and context (or validate the existing evidence). As a reminder, behavioral determinants are defined as factors that influence the performance or non-performance of a behavior, in this case handwashing. Some frameworks use the term "factors" while other frameworks refer to "behavioral determinants." The next stage involves iteratively creating and pretesting an intervention package to address the key determinants. Then, the full-scale intervention is completed, followed by evaluation, while monitoring ideally happens during the program and feeds into improving the intervention.

Table 2: Summary of Behavior Change Frameworks and Approaches Often Used to Change Handwashing Behavior

Behavior change framework or approach	Focus	Determinants included	Tools for assessing determinants	Behavior change process defined	How activities or behavior change techniques are chosen
Behavior Centered Design (Aunger & Curtis, 2015)	General	■ Brain: knowledge, risk, motives, reactions, and psychological trade-offs ■ Body: characteristic traits, skills, and sensations ■ Setting: infrastructure, props, roles, routines, and norms ■ Broader Environment: the biological, physical and social environment, and the wider context	Formative research toolkit	Five-step process with clear guidance on how to undertake each: ■ Assess (A) ■ Build (B) ■ Create (C) ■ Deliver (D) ■ Evaluate (E)	No specific guidance provided
COM-B (Michie, van Stralen, & West, 2011)	General	■ Capability: psychological and physical ■ Opportunity: social and physical ■ Motivation: automatic and reflective	No guidance provided	No guidance provided	Choose from the following list of behavior change techniques and types of activities: ■ Knowledge (e.g., feedback on behavior) ■ Skills (e.g., instruction on how to perform behavior) ■ Memory, attention, and decision processes (e.g., cues) ■ Behavioral regulation (e.g., adding objects to environment)
Designing for Behavior Change (Food Security and Nutrition Network Social and Behavioral Change Task Force, 2013)	General	■ Self-efficacy/skills ■ Perceived positive and negative consequences ■ Social norms ■ Access ■ Cues for action ■ Perceived susceptibility ■ Perceived severity ■ Perceived action efficacy ■ Divine will ■ Policy ■ Culture	Barrier analysis with clear guidance for training	Clear way of analyzing findings to recommend courses of action	Framework for users to identify bridges to activities

Behavior change framework or approach	Focus	Determinants included	Tools for assessing determinants	Behavior change process defined	How activities or behavior change techniques are chosen
FOAM (Coombes & Devine, 2010)	Hand-washing specific	■ Opportunity: access to infrastructure, product attributes, social norms ■ Ability: knowledge, social support ■ Motivation: beliefs, outcome expectations, threats, and intention	Guidance on how to do formative research, including doer/non-doer studies	Guidance on operationalizing programs	No specific guidance provided
IBM WASH (Dreibelbis et al., 2013)	WASH behaviors	■ Determinants across a range of levels: societal/structural, community, individual, habitual ■ Determinants across a range of domains: psychological, technological, contextual	No guidance provided	No guidance provided	No specific guidance provided
Levers of Change (Unilever, n.d.b)	General	■ Understanding: awareness and acceptance ■ Ease: convenience and confidence ■ Desirability: self and society	No guidance provided	■ Make it understood ■ Make it easy for children ■ Make it desirable ■ Make it rewarding ■ Make it a habit	No specific guidance provided
RANAS (Mosler, 2012)	General	■ Risk: knowledge, vulnerability, and susceptibility ■ Attitude: beliefs, costs, benefits, and feelings ■ Norms: others' behavior, others' disapproval, and personal importance ■ Ability: knowledge, confidence in performance, continuation, and recovery ■ Self-regulation: action planning, action control, barrier planning, remembering commitment ■ Social, physical, and personal context	Doer/non-doer survey complemented with qualitative methods	Four-step process: **1** Identify behavioral and contextual factors **2** Measure and determine behavioral factors **3** Select behavior change techniques and define behavioral strategies **4** Implement and evaluate	List of behavior change techniques: ■ Risk factors (e.g., present facts) ■ Attitude factors (e.g., prompt to talk to others) ■ Norm factors (e.g., prompt public commitment) ■ Behavioral factors (e.g., prompt identification as a role model) ■ Ability factors (e.g., provide instruction and infrastructure) ■ Self-regulation factors (e.g., provide feedback on performance)

Behavior change framework or approach	Focus	Determinants included	Tools for assessing determinants	Behavior change process defined	How activities or behavior change techniques are chosen
Social Ecological Model (CDC, n.d.)	General	Includes determinants across a range of levels: ■ Intrapersonal ■ Interpersonal ■ Institutional ■ Community and policy	No guidance provided	No guidance provided	No specific guidance provided
Social Marketing (NSMC, n.d.)	General	No standardized list, but commonly explores: ■ Knowledge ■ Current practice ■ External factors affecting the intervention: socio-cultural, technological, economic, ecological, political, legal, and ethical ■ Motivation ■ Costs and benefits	Guidance on how to assess behavioral determinants qualitatively through participatory workshops	Uses a six-step process: **1** Getting started **2** Scope **3** Develop **4** Implement **5** Evaluate **6** Follow up Defines *task areas* for each step	Organization around the four Ps of marketing: product, price, place, and promotion
Wash'Em (Wash'Em, n.d.a)	Hand-washing-specific	Focuses on determinants likely to vary most substantially in crises, including: ■ Behavioral setting ■ Disease perception ■ Context and identity ■ Motives and touchpoints	Rapid assessment tools and an associated training pack	Involves four steps: **1** Learning about the rapid assessment tools **2** Using the rapid assessment tools **3** Analyzing the data and entering it into the software **4** Generating recommendations Guidance also provided on monitoring and evaluation	Decision-making software to generate specific handwashing promotion activities

Initial Assessment

As the design of a handwashing behavior change program begins, it is important to take advantage of the existing information about the target population and the context-specific conditions. **Table 3** provides an outline of some topics that are useful to understand before designing a program.

Table 3: Topics to Learn About Before Designing a Handwashing Behavior Change Program

Level of information	Relevant Topics to Understand	Sources
Global	■ Association between handwashing and public health outcomes (e.g., reduction of diarrheal diseases) ■ Behavioral determinants of handwashing behavior in various settings ■ Approaches that have been applied to change behavior in other countries and their results	Academic journals and NGO reports
National	■ Availability of services/facilities (e.g., water, sanitation) ■ Local health priorities ■ National goals/indicators associated with the target behavior	National NGO reports, large surveys, and government data and policies. Country level estimates of service coverage are available at the WHO/UNICEF Joint Monitoring Programme dashboard
Local	■ Availability of services/facilities (e.g. water, sanitation) ■ Local health priorities ■ Local efforts and gaps in existing programming ■ National goals/indicators associated with the target behavior ■ Behavioral determinants in the specific context	Small-scale research, NGO reports, and local government data and policies

PHOTO CREDIT: WORLD VISION

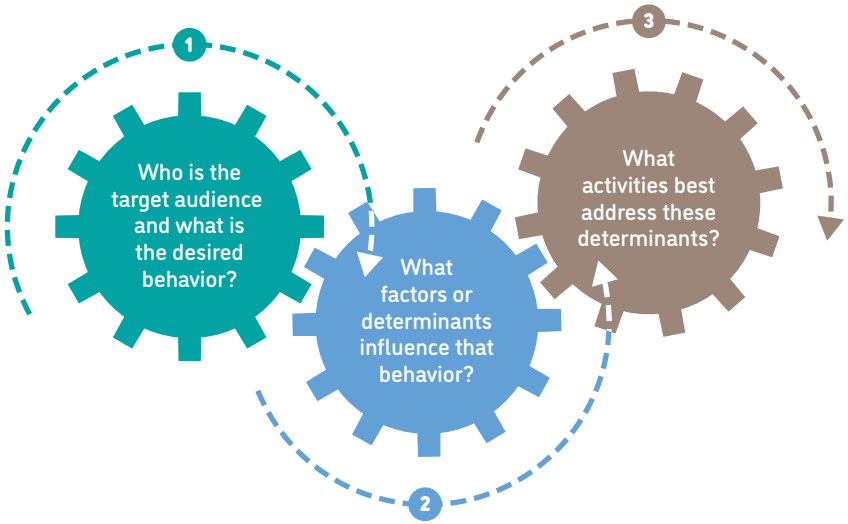
Mirrors can be a powerful nudge for handwashing

Steps of the Design of a Behavior Change Program

Designing effective strategies to change handwashing behavior requires attending to three key decisions (see **Figure 4**):

- Who is the target audience and what is the desired behavior?
- What factors or behavioral determinants most influence target audience members to perform the desired behavior?
- What activities best address these key behavioral determinants and are feasible for the program context and budget?

Figure 4: Key Decisions for the Design of a Behavior Change Program



Decision 1: Who is the target audience and what is the desired behavior?

A wide range of audiences may be targeted as part of handwashing promotion, including households, schoolchildren, health workers, market vendors, and other types of workers. Identifying which target group to focus on is key, because the barriers to and enablers of handwashing behavior may be different for each group. Putting the needs of the target audience at the center of the program will help enable their handwashing behavior.

Sometimes the target population has already been identified by a donor, funding stream, or program context, but it may need further segmentation or prioritization if the audience is large or varied. If not defined, target audiences are best selected by consulting existing data (both epidemiological and behavioral). This process of further defining an audience may be an iterative process, as data gathering and planning move forward.

Handwashing programs often target audience groups whose handwashing behavior can have the largest impact. In some instances, smaller segments of the audience may be identified as priorities because of their direct links to risk behaviors with population-level impact (e.g., midwives or food-handlers). In other cases, a particular audience segment might be targeted because a unique set of factors or behavioral determinants influence their practice (or failure to practice) of handwashing and they cannot be reached with more general approaches.

Primary caregivers of children are an important target audience of handwashing programs because they are responsible for the children's hygiene environment. In most settings, the primary caregiver is a child's mother; however, this is not always the case. It is important to identify the primary caregiver for a household and document who else participates in caring for the child, such as grandmothers, siblings, and fathers. School-age children may be a target audience because they are the community leaders and caregivers of the future. Furthermore, forming good handwashing habits at a young age makes one more likely to continue the practice in the future.

What is the behavioral objective of a handwashing program? For example, the behavioral objective could target children to consistently and correctly wash their hands with soap or other handwashing agents. In some instances, it will be vital to define the handwashing behavior in terms of context

and time (frequency and duration), such as handwashing at home and before preparing food. Also, the desired behavior could be for primary caregivers to always wash hands for at least 20 seconds before picking up or caring for an infant (context) during the first 30 days of the child's life (frequency and duration).

Decision 2: What factors or behavioral determinants most influence the target audience members to perform the desired behavior?

Taking time to understand and assess behavioral determinants or the factors that most influence a behavior is critical so that a handwashing program can focus on the key determinants.

Understanding How Brains Guide Behavior

In recent years, academics and practitioners have increasingly recognized that behavioral determinants of handwashing can be categorized into "System 1" factors (more reflexive, habitual determinants) and "System 2" factors (more reflective, conscious decision-making determinants). Successful behavior change must address both emotional motivators (System 2) and physical cues to support habits (System 1), along with additional, non-psychological determinants such as hardware availability *(Kahneman, 2011)*.

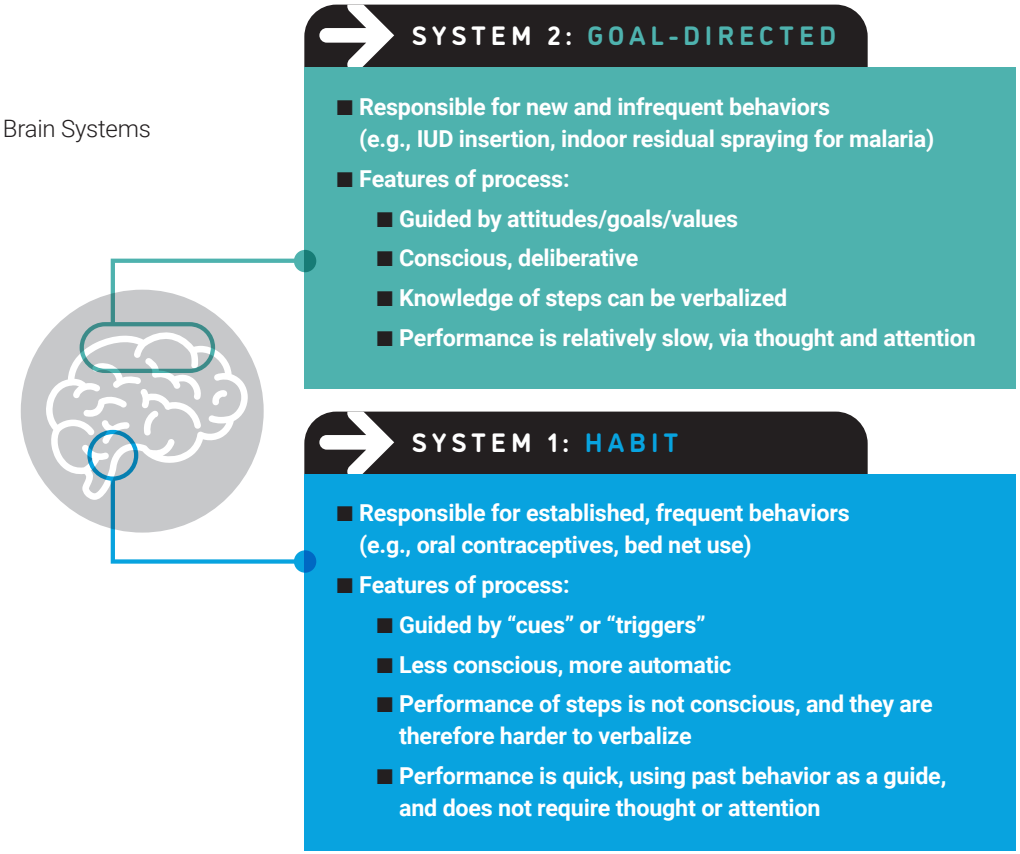


Figure 5: Brain Systems

The System 1 and System 2 framework provides a powerful reminder that handwashing is partly a planned, rational decision but is also heavily influenced by habit, culture, and "nudges" from the environment. Historically, handwashing interventions have often overestimated the importance of System 2 factors (e.g., program designers have assumed that increasing people's knowledge about germ theory will change their behavior) and have underestimated System 1 factors (e.g., have neglected ingrained habits and physical cues that can nudge increased handwashing) (see **Figure 5**).

Handwashing habit formation requires converting handwashing from a behavior that people decide to undertake (intention) into

an action that is an automatic response and does not involve the decision-making parts of the brain (habit) *(Neal et al., 2015)*. A habit is a learned, reflexive behavior that is triggered unconsciously by familiar cues in a person's life *(Wood & Neal, 2007)*. Once formed, habits are easily triggered and prompt a person to act as they did in the past, even if that person's conscious mind wants to do something else *(Wood & Neal, 2016)*. Changing habitual behavior typically involves both disrupting existing (unhealthy) habits and promoting the formation of new (healthy) ones. To break unhealthy habits and replace them with healthy habits, Neal et al. *(2015)* recommend a six-pronged approach (see **Table 4**).

These principles of habit can help program designers reshape behavior change efforts to spark lasting habitual behaviors and handwashing sustainability *(Marteau, Hollands, & Fletcher, 2012)*. Once handwashing becomes a habit, key determinants that involve decision-making, such as social norms and emotional drivers, take a back seat as the process in the brain evolves from motivation to automation. Initially, however, behavior change programming must rely on motivational factors, such as social norms, emotional drivers, and access to enabling infrastructure and supplies, to drive change.

Table 4: Principles of Habit

Principles	Example
Ensure Supportive Environment	Environmental cues, such as soap and water, must be immediately and consistently available, to facilitate automatic handwashing behavior.
Leverage Context	Changes to the physical or action environment, such as motherhood or starting school, can prompt new habits. Handwashing can also piggyback off pre-existing habits.
Eliminate Friction	Reducing choice, simplifying actions, and diminishing perceived effort can support habit formation. Making handwashing easy and accessible will help build habit.
Provide Ownable Cues	Cues trigger handwashing behavior. Posters, colored footsteps, or other local cues can nudge people to wash their hands
Encourage Practice	Having people actively washing their hands through a handwashing demonstration can help them remember the proper technique.
Promote Meaning and Motivation	Habits are stronger when they have a meaningful purpose, such as when a mother washes her hands to keep her children healthy.

Behavioral Determinants and their Influence on Handwashing Behavior

The different behavior change frameworks incorporate, weigh, and group the behavioral determinants in varying ways. For example, the RANAS framework refers to Attitudes and Beliefs as behavioral determinants, while the

"Handwashing habit formation requires converting handwashing from a behavior that people decide to undertake (intention) into an action that is an automatic response and does not involve the decision-making parts of the brain (habit)"

Designing for Behavior Change framework captures the same behavioral determinants under the categories of Culture, Social Norm, Perceived Susceptibility, and others. Either of the frameworks could be used to design a successful behavior change program. The key to program planning is using evidence to identify the few key determinants most influential in the performance or non-performance of handwashing in the context of the target audience.

Knowledge. Knowledge about handwashing can be defined as knowing the benefits of handwashing, knowing how to effectively wash hands, and knowing when to wash hands. Handwashing knowledge is necessary but not sufficient for motivating people to practice handwashing. Knowledge seems to be context dependent, and increasing knowledge of a problem without improving self-efficacy often leads to psychological defense mechanisms, avoidance, or reactance rather than changes in behavior (*Cho & Witte, 2005*). A 2017 systematic review showed that sanitation- and hygiene-based messaging aimed at increasing knowledge and improving skills resulted in only temporary improvements in handwashing behavior *(De Buck et al., 2017)*. In Bangladesh, knowledge of handwashing was mostly restricted to acknowledging its importance after defecation and did not extend to recognition of other key times for handwashing, such as before eating, before serving food, or before handling infants *(Rabbi & Dey, 2013)*. Enhancing knowledge about germs without linking it to something of plausible, immediate value, such as lower healthcare costs, is unlikely to lead to higher levels of handwashing *(Curtis et al., 2009; White et al., 2020)*.

PHOTO CREDIT: HAPPY TAP

Enabling products facilitate handwashing practice

Enabling infrastructure and products. Easy access to necessary enabling infrastructure and products can facilitate handwashing practice, and the prominent placement of those supplies may serve as a reminder to wash hands *(Contzen & Mosler, 2015; Rabbi & Dey, 2013)*. The more readily accessed water is, the more likely individuals are to wash their hands with soap and water.

Recent studies also suggest that the placement of handwashing supplies at handwashing stations can successfully nudge handwashing practice *(Dreibelbis, 2016)*. The selection and placement of enabling technologies can critically influence handwashing frequency and practice. For

example, commercial and do-it-yourself handwashing stations can provide flowing water, enabling people to practice a key element of proper handwashing technique, rather than having to dip their hands into a bowl. Providing soap or another handwashing agent close to the flowing water in a convenient arrangement increases the likelihood that they are used for proper handwashing. In settings such as schools or other institutions, placement of several handwashing stations in locations associated with a key time for handwashing—particularly near latrines and cooking or eating areas—can improve the frequency and quality of handwashing *(Dreibelbis, 2016)*.

Emotional drivers. Emotional drivers can motivate a particular behavior and often come in the form of emotions, such as status, disgust, and fear. These emotions can play a substantial role in handwashing behavior. On the positive side, individuals desire to be admired and respected; this is a driver in areas where handwashing with soap is a mark of status. Likewise, people want to avoid being labeled "dirty;" this fear may be intensified following a Community-Led Total Sanitation triggering event or similar campaigns *(Biran et al., 2014; Curtis, Danquah, & Aunger, 2009; Aunger & Curtis, 2016)*. Disgust about not washing hands is positively associated with handwashing behavior in Haiti, Zimbabwe, and Ethiopia, but not in rural Burundi or in Ghana, where perceptions of risk were low *(Contzen & Mosler, 2013; Friedrich et al., 2018; Contzen et al., 2015; Seimetz et al., 2017; Scott et al., 2007)*. Fear is primarily a driver for handwashing in the case of epidemics, such as cholera, but old habits return after the epidemic is gone *(Contzen & Mosler, 2013; Curtis et al., 2009)*.

Beliefs and attitudes. Beliefs and attitudes can affect handwashing practice. Unlike other determinants, these two determinants are considered umbrella determinants, as they are broad categories that reflect social norms and perception of risk. Beliefs and attitudes regarding handwashing are highly culturally dependent, with little consistency across studies. In Kenya, women who believe handwashing increases attraction are more diligent about handwashing; however, some people believe that women who focus on handwashing are trying to position themselves above their neighbors. *(Aunger et al., 2010; Curtis et al., 2009)*.

Depending on context, beliefs about the severity of illness and how handwashing might prevent illness operate in different ways. Perceptions of the severity of illness, for example, are associated with more consistent handwashing behavior in Haiti and India *(Contzen & Mosler, 2013; Biran et al., 2014)*. Conversely, greater perceived severity of illness is correlated with a lower likelihood of having a handwashing station in Senegal *(World Bank, 2012)*—although in this case, mothers may have perceived more of a risk because they lacked a handwashing station. Other determinants closely related to beliefs and attitudes that are known to influence handwashing behavior are intention (*Seimetz, Kumar, et al., 2016*), commitment (*Contzen et al., 2015*), and planning *(Contzen & Mosler, 2013)*.

Social norms. Social norms are informal beliefs or understandings among a group that drives the group's behavior *(Mackie, Moneti,*

"Providing soap or another handwashing agent close to the flowing water in a convenient arrangement increases the likelihood that they are used for proper handwashing."

Shakya & Denny, 2015). Social pressure to practice handwashing operates in complex ways. Numerous handwashing interventions have found that being affiliated with a group and joining in with what others are doing is a key motivator of handwashing behavior *(Biran et al., 2014; Hoekstra et al., 2009; Leontsini & Winch, 2014).* Failure to establish new norms that would support handwashing is sometimes cited as a cause for the failure of interventions. Descriptive norms (the number of people in a community or family who regularly wash hands) are consistently associated with better handwashing behavior in various contexts, including in Ethiopia, Haiti, and Senegal *(Contzen et al., 2015; Contzen & Mosler, 2013; World Bank, 2012)*. Injunctive norms (when people close to an individual approve or disapprove of a behavior) are similarly significant *(Leontsini & Winch, 2014)*.

Social norms also influence behavior in healthcare facilities. One study that observed handwashing behavior in two states in Nigeria found that despite adequate handwashing facilities and sufficient knowledge, health care providers did not follow the WHO-recommended hand hygiene protocol *(Buxton et al., 2019).* Non-compliance varied by time of day but not by type of health care provider. This variation suggests that disruption of negative norms will require addressing gaps in provider motivation – which may be best addressed through changes in social norms.

It is important to note that a program may not need to address all of these determinants to successfully impact handwashing practice. Rather, key determinants should be identified based on the target audience and behavioral objective.

How to Collect Information about Behavioral Determinants

Formative research is often used to support the design of handwashing behavior change programs. Understanding handwashing behavior can be complex and challenging because what people say they do is often different from what they actually do. That is, people tend to report their handwashing behavior as they perceive it should be done rather than what they actually do. For this reason, simply asking questions about behavior may not provide a realistic picture of actual practices.

For some behavior change frameworks, the primary formative research method is linked with the framework. If a framework is being used which does not have a set primary formative research approach, the choice of methods for formative research could be based on which determinants of behavior need to be studied because they

DEFINITION

What is formative research?

- **Aims to understand what people think, feel, and do in relation to a behavior**
- **Seeks to learn about broader contextual factors that may influence behavior**
- **Focuses on generating sufficient information to inform program implementation**
- **Involves qualitative and quantitative methods**
- **Is often completed rapidly**

PHOTO CREDIT: FHI 360

Good formative research requires good planning

are the least known or understood of likely key determinants affecting handwashing behavior. Formative research builds on existing knowledge, and programs can often use previously conducted surveys and evaluations to inform their design. For example, if data from a previous survey about the target audience's handwashing knowledge is available, formative research efforts should focus on understanding other behavioral determinants which seem important but were not explored adequately or clarifying lingering questions from the previous survey about key determinants of handwashing.

It is also important to remember that no formative research methods are perfect; all have biases or weaknesses. For example, quantitative methods have a high degree of generalizability and can be helpful in answering the who, what, and when questions for program design, but often fail to establish the why and how. Also, quantitative research can be more time consuming due to preparation and statistical analysis. Qualitative research can complement quantitative methods by providing deep insights into the target audience or contexts, and answering some of the why and how questions. Qualitative research can also be used as an exploratory method when not enough information is known to construct valid and reliable survey instruments for quantitative research. Through triangulation—using different research methods and drawing together the findings—researchers can construct a more complete picture of the current practice of a behavior and its determinants.

Formative research studies should be tailored to program needs and resources. It is optimal to allow sufficient time in the field to effectively understand the drivers of target behavior change, but when this is not possible due to resource constraints, briefer periods of data collection can still yield valuable insights through methods such as interviews, focus group discussions, and observation. Just one day of immersion in the lives of the target audience is far better than none, but a week to two weeks of learning from a population can provide a more in-depth understanding.

Many behavioral theories recommend using specific methods to understand different determinants. For example, Behavior Centered Design (see **Table 2**) has a particularly comprehensive list of participatory tools that can be used for understanding handwashing or other behaviors. **Table 5** summarizes some common formative research methods along with their strengths and limitations. For examples of techniques to measure handwashing, see **Table 6.**

Table 5: Common Formative Research Methods

Method	Explanation	Strengths	Limitations
Focus Group Discussions	Involves asking a small number of people to discuss a range of topics related to their handwashing behaviors	■ Allows consensus to form on specific issues related to handwashing ■ Can be more efficient than other methods of data collection	■ Data may not be as in-depth as that gathered with other methods. It can be difficult to get honest answers from participants on sensitive topics, especially within a group discussion
In-depth Interviews	Is a qualitative research technique that explores an individual's perspective about a particular behavior	■ Essential to determine ultimate cause of behavior. ■ Can reveal motives and barriers if done thoroughly	■ Requires a trained interviewer. Can be time-consuming, so this is normally done on a small scale
Observation	Involves staff spending an extended period of time (e.g., 3 hours each) within households, observing daily routines and behavior	■ Provides a realistic understanding of behavior and the context in which it occurs ■ Can identify barriers to ideal behavior	■ Participants should be informed that "daily routines" are being observed (rather than handwashing behavior) to minimize bias ■ Can be time-consuming, so is normally done on a small scale ■ Households may be hesitant to act in their normal ways in front of a stranger
Surveys	Standardized questionnaires that are administered to a large number of people to generate rates of reported behaviors or beliefs	■ Easy to train staff to do ■ Can be used as baseline data, and then to support program evaluation	■ Self-reported handwashing behavior tends to be over- estimated, and there may be biases in reporting of beliefs ■ Data can be generated only on what is asked, and it is easy to miss information ■ Collection and analysis can be time-consuming

Data collected through formative research can help program designers identify the key determinants of a behavior for the selected target audience. Those key determinants should be addressed through the selection of program activities, so that barriers are mitigated and enabling factors are built upon, and that leads us to the next decision in the design process.

Decision 3: What activities best address these key behavioral determinants and are feasible for the program context and budget?

Using the information gathered from formative research, program designers select, refine, and implement a set of activities best suited to address the key determinants of the target behaviors among the target audience. Much like matching the right tool for a job, this involves matching each behavioral determinant to a proposed activity to change behavior. The process requires planners to think about how they will actually bring about behavioral change (by identifying behavior change techniques) and how the target audience will be reached (by identifying appropriate delivery channels). These are often combined to create a theory of change for a behavior change program. A theory of change describes how a program proposes to bring about a change in behavior or health outcomes, outlining a step-by-step series of causal events. When developing a theory of change, it is useful to use a "backwards mapping" approach, which starts with the desired impact and outcomes and works backwards to identify the short- and medium-term actions and objectives required to achieve the outcomes *(Brown, 2016)*.

"Behavior change techniques (BCTs) ... serve as a bridge to an activity"

PHOTO CREDIT: UNICEF

The habit of handwashing should start young

Behavior Change Techniques Make the Connection to Activities

Behavior change techniques (BCTs) are a type or category of activities that are theoretically informed and correspond with the key determinants for the target audience and behavior. It is important to note that BCTs are not synonymous with activities, rather they serve as a bridge to an activity. Examples of BCTs include providing cues and infrastructure (ability), informing the target audience of facts from credible sources (information), and prompting feedback on the behavior (self-regulation) *(Michie et al., 2013)*. A specific example of a BCT includes incentives. While incentives are a category of activities, there are multiple ways incentives could be applied in practice through specific activities. Activities should be more specific about the incentive type and who, when, and how it is used for the program.

Formative research findings must be linked with BCTs and then developed into detailed

activity descriptions that can be implemented in the program setting. The following frameworks provide additional guidance on how to make this transition: RANAS process, Wash'Em, and Designing for Behavior Change (described in **Table 2**).

Figure 6 shows an example of the process of translating formative research into BCTs, which are then used to develop project activities.

Delivery Channels Bring Communications to Life

Community members and/or key informants should also be consulted when program planners are mapping out all of the ways to reach them through different delivery channels. Community perspectives can be ascertained during formative research, through either market research on the target audience or even simple brainstorming exercises.

When deciding which delivery channels to use, consider the following:

Reach: Which delivery channels are available to the majority of people in the target population? If considering mass media, pay attention to which stations people tune in to and at what times. Different members of the family may tune into a different station or listen at different times of the day. If working in an area where people have access to social media and the internet, determine which websites and social media platforms are trusted and how they are used within the culture.

Accessibility: While overall reach is important, it is also necessary to consider which delivery channels are most appropriate for different segments of the population. Women and girls, older people, people with disabilities, people with pre-existing medical conditions, people living in rural areas, and other vulnerable groups are all likely to be harder to reach through most delivery channels. It may be necessary to actively engage these populations to identify their preferences and tailor materials to their needs.

Figure 6: Process to Translate Formative Research Findings to Project Activities

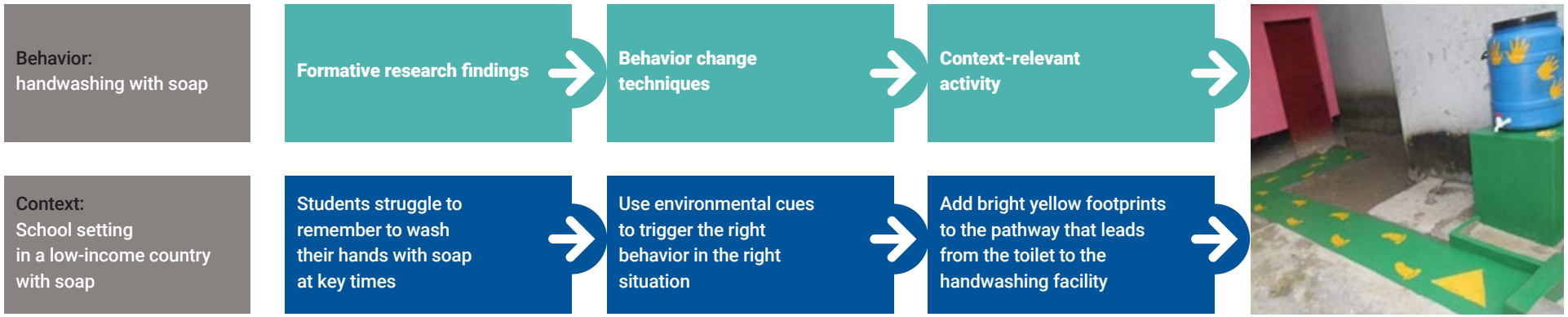


PHOTO CREDIT: SAVE THE CHILDREN

Credibility and trustworthiness: Which communication channels or individuals do people trust or respect? Exploring these questions with communities may challenge common assumptions about what constitutes reliable public health information. For example, a study among Rohingya refugees living in Bangladesh found that during outbreaks they preferred receiving information from trained community leaders, such as imams and women's group leaders, over health and aid workers who are not always seen as trustworthy and who are sometimes misunderstood *(ACAPS, IOM, 2020)*. Refugees also trusted public health information from members of the Rohingya diaspora rather than from local news services, because Bangladeshi and Burmese news services are seen as stigmatizing refugees, and even legitimizing violence against them.

Influence and persuasion: Even though certain delivery channels or sources of information may not be seen as credible or trustworthy, they may still be persuasive or influential. For example, many people know to question the credibility of information they see on social media. However, people might find social media posts influential and persuasive for a range of reasons. The persuasiveness of information often depends on its design, content, and format (e.g., photos and videos may be more persuasive than text alone *[Joffe, 2008]*), whether messages resonate with a person's beliefs and values, and on who shares the information in a person's social network.

Interventions that use a range of delivery channels to engage and remind populations of their messages are typically more successful in changing behavior. Selection of the appropriate mix of delivery channels and activities is key to increasing and improving handwashing practice. Planners must carefully design and manage the activities to ensure they address the needs and priorities identified through audience research.

Activities for Handwashing Uptake

Translating formative research into BCTs and contextualizing activities is often the most challenging part of designing a behavior change program. To overcome these challenges, it is useful to work with a diverse group of actors to develop creative handwashing activities. This may include creative or marketing agencies, public health practitioners, and representatives from the target population *(Aunger, White, Greenland, & Curtis, 2017)*. Additionally, experienced hygiene and behavior change professionals can provide expertise and assist with the design of activities, including selecting the most effective communication channels for reaching particular audiences and addressing certain key determinants for the target audiences.

Activities of the handwashing program may include supporting a sustainable increase in access to key handwashing supplies, such as soap, or supporting the establishment of policies with sanctions to promote handwashing by food vendors. As discussed earlier in this chapter, the presence of a handwashing facility can make people more likely to wash their hands, so having adequate facilities for handwashing is often an important issue for programs to address in the contexts being targeted, whether in homes or in public places. The design and placement of a handwashing facility can also help drive behavior. For example, nudges, such as mirrors at the handwashing station or footsteps leading from the latrine to the handwashing station, can encourage handwashing behavior on a subconscious level, which facilitates habit formation.

Specific activities of a handwashing improvement strategy may also include communication activities, such as radio dramas and interpersonal communication, as well as engagement of influential community leaders to strengthen social norms regarding handwashing at critical times. Placing handwashing messages at key locations can act as a cue to trigger handwashing behavior. Likewise, showcasing the power of soap through simple and fun activities, such as washing hands covered with glitter, can be an important visual to increase knowledge among children. Creating lasting handwashing habits requires the whole community to work together and adopt handwashing with soap regularly. Rewarding people or institutions as they continue to practice and prioritize a new behavior can be important to move them toward habit formation. Small tokens, such as stickers, or simple praise can provide incentives to sustain handwashing behavior. For example, USAID's Clean Clinic Approach focuses on facilitating incremental, low-cost WASH improvements to improve maternal and newborn health outcomes. Clinics that commit to taking the steps outlined in the approach are rewarded with a certificate honoring their commitment to WASH *(Maternal and Child Health Survival Program, 2016)*. Utilizing prominent and respected figures to encourage handwashing can also be a way to catalyze long-lasting handwashing behavior among the target audience.

After developing an initial draft version of a project plan, it is critical to pretest the communications approaches, so that any needed adaptations can be made before implementing at scale. Take time to learn from the target audience and how they interpret the messages or activities. Likewise, listen to the target audience about whether anything is unclear, whether the messages and activities are relevant to them, and how the project materials and approach makes them feel. It is critical to adjust materials and activities based on this feedback, so that the behavior change program can be optimized.

RESEARCH FINDINGS

Using a "Nudge" to Increase the Habit of Handwashing

The term "nudge" was popularized by Thaler and Sunstein's book of that name, published in 2008. Nudges involve directing people's behavior in a particular way WITHOUT appealing to their rational thinking; providing traditional incentives; or forbidding any options. In other words, nudges use design elements to encourage handwashing behavior on a subconscious, emotional level.

The use of "surprise soaps," transparent soap bars with a toy embedded in the middle, could be considered a "nudge" *(Watson et al., 2019a)*. These modified soap bars entice children to wash their hands so they will be able to play with the toy in the middle, making handwashing fun. Another example of a nudge is painting colorful footsteps on the ground leading from school latrines to handwashing stations, which was found to be an effective way to nudge children to wash their hands after using the toilet *(Grover, Hossain, Uddin, Venkatesh, Ram & Dreibelbis, 2018)*.

In both cases, these interventions were effective at increasing handwashing behavior but did not involve changing rational thinking (e.g., teaching people about germ theory), offering traditional rewards (e.g., money), or prohibiting any behavior (e.g., changing rules). Many behavioral determinants could potentially be influenced by "nudges." However, a concern is whether the impact of a nudge would wear off over time. Whether nudges create lasting change or only short-term change warrants further research.

Monitoring and Evaluation

Monitoring and evaluation (M&E) processes can assess the performance of a project or program, ensuring the program can effectively monitor change. M&E should be thought of as a single process, utilizing data collected on an ongoing basis and at different time points. M&E data support learning and accountability for all stakeholders, including funders, beneficiaries, implementers, and policy makers. It is critical to plan monitoring and evaluation processes at the proposal writing stage to ensure M&E processes are sufficiently resourced.

Monitoring is a continuous process of collecting data throughout the lifecycle of a program. It involves the collection, analysis, communication, and use of information about the program's progress. Monitoring data should highlight the strengths and weaknesses in implementation. Adaptive management allows decisions and adjustments to be made in response to changes in the environment. Collaborating, Learning, and Adapting (CLA) is a framework and set of practices that promote intentional learning and flexible program design by supporting continuous learning through organizational culture, process, and resources *(USAID, 2018b)*. The frequency of monitoring must match the planned uses of the results of the monitoring effort.

Evaluation refers to the systematic assessment determining whether a program is achieving or has achieved its stated goals and objectives. There are different types of evaluations and the evaluation design will depend on the questions which need to be answered. Process evaluations are completed to inform the degree of fidelity to the project design which implementers have had when conducting the project. Impact evaluations determine the effect of the program for the overall long-term outcomes. To support impact evaluations, baseline studies are often completed before the project begins to provide a baseline to measure progress against. Then at the midterm or end of the project period, a study is completed to determine the overall results of the project.

Indicators for Monitoring and Evaluation

As part of developing the theory of change discussed in the Decision 3 section of this chapter, indicators are developed and defined to measure progress through both monitoring and evaluation activities. Monitoring is an ongoing process and should primarily focus on indicators related to activities and outputs, but may also include routine assessment of intermediate and long-term outcomes of a project. Impact evaluation focuses primarily on the higher-level goals of the theory of change, assessing the achievement of outcomes and impacts *(USAID, n.d.)*. **Figure 7** provides a worked example of indicators for a project that plans to change handwashing behavior with the aim of reducing COVID-19 transmission.

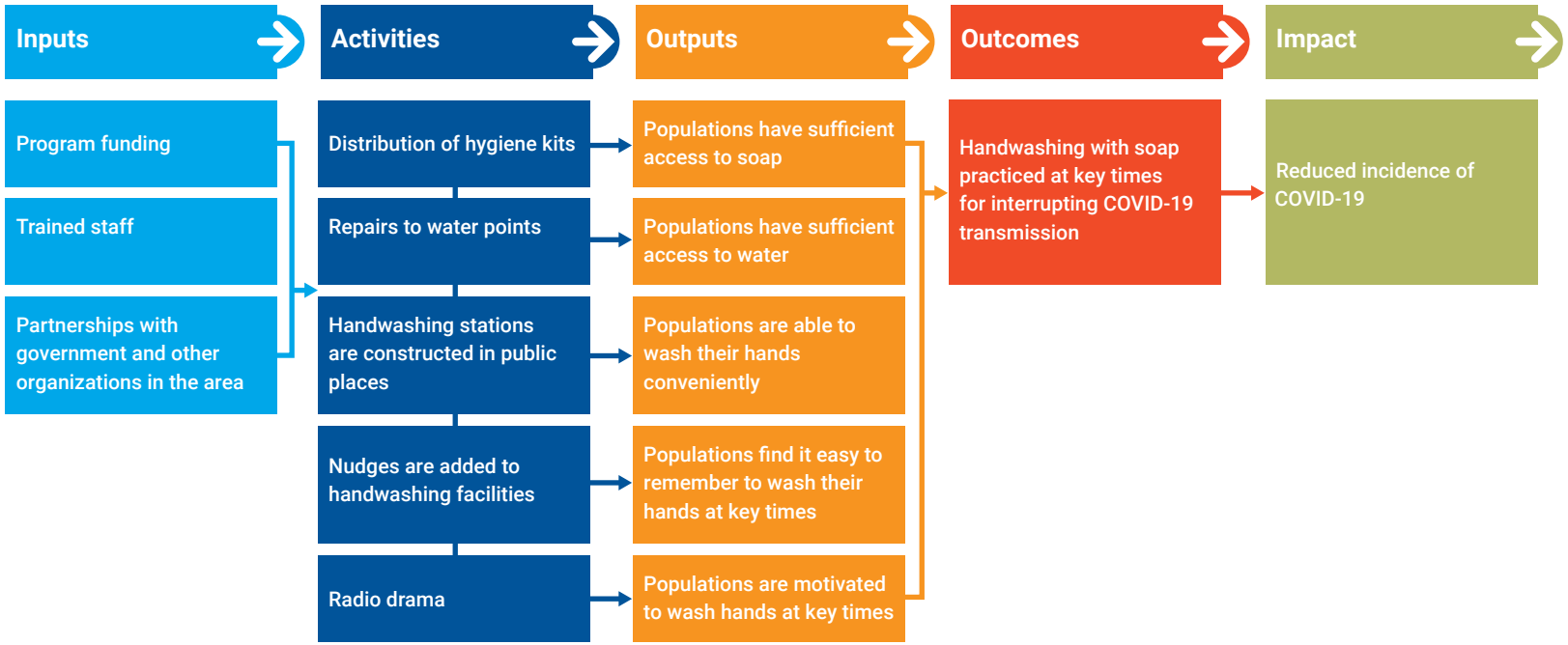
PHOTO CREDIT: CAWST

Handwashing practice can be difficult to monitor

The figure uses the following definitions:

- **Inputs:** The raw materials that the project requires (e.g., money, materials, technical expertise, training, relationships, and personnel) to deliver activities, and achieve the outputs and objectives.
- **Activities:** The process or actions taken that will transform inputs and resources into the desired outputs.
- **Outputs:** The direct results of the project activities. All outputs are things that can be achieved during the period of the project and are linked to the objectives and goals.
- **Outcomes:** Specific statements of the benefits that a project or intervention is designed to deliver. These should support the goal and be measurable, time-bound, and project-specific. Many projects have more than one objective.
- **Impact:** The long-term, large-scale challenge that the program will contribute to addressing.

Figure 7: Examples of Indicators for a Handwashing Program



Measuring Handwashing Behavioral Outcomes

Handwashing behavior is notoriously hard to measure *(Ram, 2013)*. This is because it is a routine behavior that typically happens multiple times a day, making it difficult to accurately recall. It is also a socially desirable behavior, meaning people know it is the right thing to do and will often say that they practice proper hand hygiene even if they do not.

There are a range of ways that handwashing is commonly measured (see **Table 6**).

"What gets measured gets done" is a common saying that emphasizes the importance of monitoring and evaluation and the careful selection of indicators included in the M&E plan. The saying can also be interpreted as: "What gets measured gets valued." All staff working on handwashing programming should value the goals and impacts that handwashing programming can have, and strive toward optimization of the programming through *Collaborating, Learning, and Adapting* (CLA) or another adaptive management approach. Handwashing is too important to "go through the motions" of doing a good job on a project, or for staff to work really hard on a program, only to discover that the design had somehow missed the mark on effectiveness. The M&E process serves as a tool to optimize the outcomes of the program.

Table 6: Handwashing Measurement Techniques

	Description	Strengths	Limitations
Self-reported behavior	This is normally measured via a survey or interview. There are a range of ways people can self-report aspects of handwashing behavior. Questions can measure frequency, handwashing at critical times, knowledge, product use, and intention	■ Self-reported information is normally quick and easy to obtain ■ Useful to understand knowledge about behavior ■ Can be used to complement other behavioral outcome measures	Does not provide a reliable understanding of behavior due to social desirability bias (people are likely to say they wash their hands more than they actually do) and recall bias (people find it hard to remember handwashing frequency accurately)
Proxy measures	Proxy measures include assessing an indirect measure of handwashing, such as availability and use or depletion of handwashing materials. The Joint Monitoring Programme hygiene indicator, which uses a spot-check assessment to see whether there is a handwashing facility with soap and water present, is an example.	■ Quick to collect data (much quicker than a survey) ■ Provides a realistic estimate of behavior (much better than self-reported surveys) ■ Compares program to other handwashing programs around the globe and is used by most national governments	Does not reflect actual behavior (including frequency and timing of handwashing) but it gives an indication of what behavior is likely to be. To do this, it uses an assumption: if soap and water and a handwashing facility are not present outside the toilet, then hands are not being washed, as it would be too difficult and inconvenient to do on a regular basis. Even when these things are present, they do not guarantee handwashing, but their presence does create the right enabling conditions, indicating that the family members could easily practice handwashing if they wanted

	Description	Strengths	Limitations
Handwashing demonstration	Ask people to demonstrate how they would normally wash their hands if at a particular critical occasion (e.g., after toilet use).	■ Useful for understanding the factors in the environment that could enable or prevent handwashing ■ Can help to understand behavior within a particular context ■ Can help to inform programmatic changes and improvements to infrastructure	This is subject to social desirability bias. When someone demonstrates their "normal" handwashing behavior, they will likely show their version of "ideal handwashing"
Diary-keeping	Participants are given a diary and some stickers representing common daily actions. Handwashing is one of many daily actions. Each day participants are asked to record which actions they did.	■ More reliable than asking about self-reported handwashing behavior, as the participants are not aware of which behavior is of interest to the researchers	■ Hard to do reliably at scale ■ Needs support and training to be provided to participants ■ Handwashing may be over-reported due to social desirability bias
Structured observation	Data collectors spend an extended period of time, e.g. 3 hours or more in each household, school, or workplace observing behavior and noting down whether or not hands are washed at critical occasions. To minimize bias, participants are not told that handwashing is being observed, but rather that the data collectors are learning about daily routines.	■ Measures actual behavior rather than reported or proxy measures ■ Can be useful to learn about behavior in context and within daily routines ■ Considered the most reliable way of measuring handwashing behavior	■ Time consuming and hard to do at scale ■ Requires staff to be well trained ■ Behavior may be affected by the presence of observers ■ In some settings, observation may be unacceptable
Handwashing monitors	Handwashing monitors are electronic devices that are installed in soap dispensers or taps, to track handwashing behavior in a particular setting.	■ Measures actual behavior rather than reported or proxy measures ■ Monitors are normally not visible and have no effect on people's behavior	■ Can only measure behavior in the setting where they are installed ■ Generates a lot of data, which can be challenging to analyze ■ Needs specialized expertise to set up ■ Not normally possible to track who is performing the behavior if multiple people wash their hands in the settings where the monitors are positioned

Chapter Takeaways and Resources

When designing programs for handwashing behavior change, planners must translate theories and frameworks into activities in the field. Behavior change frameworks provide an overarching strategy for interventions designed to trigger and maintain handwashing practice. Key takeaways include:

"Handwashing is too important to 'go through the motions' of doing a good job, on a project or for staff to work really hard on a program, only to discover that the design had somehow missed the mark on effectiveness."

- **Follow a systematic process.** Behavior change programs are more likely to succeed when they employ an evidence-based, theory-driven and systematic process. Clear articulation of the target audience, desired behavior and the identification of the key behavioral determinants will help practitioners to identify the most appropriate behavior change techniques, activities and channels for an effective handwashing program.
- **Know the audience.** Handwashing behavior change is context dependent. Different determinants affect the handwashing behavior of different audiences. It is critical to understand the target audience and determine what would motivate and support handwashing.
- **Identify determinants that influence handwashing practice.** It is important to consider the two systems of the brain —"System 1" (more irrational, habitual determinants) versus "System 2" (more rational, conscious decision-making determinants) —when designing behavior change activities. Consider emotional drivers as well as environmental cues.
- **Build on what is known.** This chapter provides practical examples of and resources from successful (and unsuccessful) approaches to behavior change. There is no need to start from scratch. Rather, consult and confirm available data and apply best practices.
- **Assess and adjust.** Monitoring and evaluation are an important part of program design and implementation. Practice adaptive management to allow for adjustments in response to changes in the target audience and environment, or in areas of programming that could be improved. Share key insights learned throughout the process.

Additional Resources for Designing and Implementing Handwashing Programs

- **Global Handwashing Partnership.** Using Nudges to Encourage Handwashing with Soap. This brief describes the role of nudges and provides guidance on their use as interventions.
- **Global Handwashing Partnership.** Communicating Hand Hygiene During COVID-19. This guidance brief provides suggestions and tips for accelerating planning for behavior change initiatives, with a focus on COVID-19.
- **Eawag: Swiss Federal Institute of Aquatic Science and Technology.** Systematic Behavior Change in Water, Sanitation and Hygiene: A Practical Guide Using the RANAS Approach. This manual gives practitioners a tool to use in designing an effective behavior change campaign. The methodology is explained step by step, all necessary skills and other requirements are described, and possible pitfalls are noted.
- **Food for the Hungry.** Barrier Analysis Facilitator's Guide. This resource guides trainers through a step-by-step process for conducting barrier analysis and provides background information on the technique as well as some basic information on behavior change theory.
- **Food Security and Nutrition Network Social and Behavioral Change Task Force.** Designing for Behavior Change for Agriculture, Natural Resource Management, Health, and Nutrition. This curriculum, originally adapted from the Academy of Educational Development's BEHAVE tool, trains participants to apply the Designing for Behavior Change Framework to improve development programming.
- **Institute of Development Studies.** Handwashing Compendium for Low Resource Settings: A Living Document. This compendium provides guidance and examples of low-cost handwashing facilities that can be implemented in low- and middle-income countries.
- **UNICEF.** Handwashing Stations and Supplies for the COVID-19 Response. This document explains handwashing station designs for policy makers and implementers, with an emphasis on local manufacturing and procurement that complement existing technical and programmatic guidance.
- **USAID, SCALE & PRO-WASH.** Make Me a Change Agent. This updated "trainer of trainers" manual builds the skills of community workers to promote WASH-integrated and context-specific behavior change in their communities.
- **Wash'Em.** Wash'Em Tools and Software. The Wash'Em process is used to design rapid, evidence-based, and context-specific hygiene programs, with a focus on crisis-affected populations.
- **WASHplus.** Behavior-Centered Approaches to Improve Health Outcomes. This technical brief presents the WASHplus approach to behavior change applied in various country settings. Elements of the brief include the WASH Improvement Framework, the BEHAVE Framework, small doable actions, stages of change, and the science of habit.
- **World Bank Water and Sanitation Program.** Practical Guidance for Measuring Handwashing Behavior. This working paper discusses a set of handwashing indicators and recommendations for their use in country programs.

CHAPTER 4

Improving Handwashing in Specific Contexts

PHOTO CREDIT: WORLD VISION

PHOTO CREDIT: UNITED PURPOSE

Chapter 3: Designing and Implementing Handwashing Programs provides insights for the scale-up of handwashing that can be applied in a range of contexts. For optimal prevention of the spread of diseases, handwashing must be practiced at home, as well as in schools, healthcare facilities, workplaces, marketplaces, and emergency contexts. Handwashing contributes to achieving the objectives of many different sectors, and thus should also be considered as a part of integrated programming that addresses education, health, nutrition, early child development, and equity and inclusion. Improving handwashing in specific contexts and through integrated programming is discussed in this chapter.

Handwashing in Households

Despite the evidence that hand hygiene is inextricably linked to limiting the spread of communicable diseases, the practice of handwashing in the home is still suboptimal. Limiting disease transmission requires handwashing at several junctures, including before food preparation and eating, after defecation or cleaning a baby's bottom, as well as after other potential exposures to pathogens, such as contact with animals, money, and cell phones.

As discussed in the previous chapter, a range of behavioral determinants influences the practice of handwashing, and these determinants likely vary by target audience and by juncture for handwashing. For example, different sets of determinants likely influence whether caregivers practice handwashing after cleaning a baby's bottom versus whether men wash their hands before eating or after handling livestock. Therefore, there is no single best practice approach to motivating the improvement of handwashing in households.

Chapter 3 reviews the various determinants and their roles in influencing handwashing behavior. Handwashing knowledge is shown to be necessary but not sufficient. Access to key enabling products such as water and soap are fundamental determinants; however, even when people have access to soap and water and understand the importance of handwashing with soap, they often do not practice proper handwashing. Though it is difficult to ascertain why not, often it has to do with how water and soap are prioritized in households with limited supplies of both. Certain members of the household, such as husbands and mothers-in-law may have more influence over when these valuable resources are bought and used. Therefore, all family members must be included in efforts to increase handwashing within the home.

Successful handwashing improvement in the home is often motivated by links to child health and growth; specifically, keeping fecal contamination from being spread from hands to food and water. Because of this motivating linkage, handwashing in households is often an integral part of child and nutrition programming. More recently, handwashing has been added to the standard triggering event for Community-Led Total Sanitation

(CLTS) to complement the objective of CLTS to move a community away from open defecation. This addition includes a *Shit and Shake* exercise that demonstrates the link between handwashing and preventing feces ingestion. In Malawi, use of this tool rather than the standard CLTS triggering approach led to a 55% increase in households installing a new handwashing facility and a 15% increase in soap being found at the handwashing facility *(Maulit, 2015)*. On the other hand, a study in Nigeria found that CLTS with the addition of the *Shit and Shake* exercise along with a significant additional behavior change approach did not result in substantial changes in handwashing practice. While this intervention did produce slightly better results than implementing CLTS alone, the effects were likely not sufficient to produce an improvement in public health *(Biran et al., 2020)*. This study indicates the need to identify more effective approaches for integrating handwashing into CLTS programming, such as a focus on both handwashing stations and social and behavior change communications while the enabling environment for handwashing is also strengthened.

Handwashing in Schools

According to the WHO/UNICEF Joint Monitoring Programme, 31% of schools worldwide—serving nearly 570 million children—lack access to basic drinking water. In sub-Saharan Africa, potable water is not available in almost half of the schools. Globally, more than 620 million children do not have access to basic sanitation at school, and 900 million lack basic handwashing facilities at school *(WHO & UNICEF, 2018)*.

Lack of WASH facilities and hygiene education in schools is detrimental to the health and education outcomes of schoolchildren. Widespread health impacts, such as diarrhea, intestinal worms, and respiratory infections, contribute to school absenteeism and increased drop-out rates, whereas having handwashing as well as water and sanitation services in schools has been shown to result in a marked improvement in school attendance and teacher-pupil interaction time *(WASHplus, 2016b; Willmott et al., 2015)*.

Schools can create the routine of handwashing for students

PHOTO CREDIT: SPLASH

Different interventions have been found to successfully increase handwashing in schools. UNICEF's Three Star Approach encourages schools to take simple, inexpensive steps that are designed to ensure all students wash their hands with soap, have access to drinking water, and are provided with clean toilets *(UNICEF, 2013).* Likewise, WASH-Friendly Schools provide a supportive environment for reliable water, sanitation, and hygiene services in schools, which improves learning outcomes *(FHI 360, 2014)*. Interventions that are simple, scalable, and sustainable ensure that schools can meet the needs of children.

Even where schools have WASH facilities, physical and social barriers may prevent some students, such as girls and children with disabilities, from accessing these services. Inclusion requires shifts in not only the physical environment (infrastructure improvements to allow physical access to facilities) but also in attitudes (reduction in stigma or misinformation) *(Staniford & Schmidtke, 2020; Watson et al., 2017).*

For organizations that are developing and implementing WASH in Schools programs and content, the following considerations can help ensure a successful, inclusive outcome including improved handwashing:

Identify WASH priorities for the context and audience. Consult with sector experts, advisors, government officials, partners in the field, community members, and those who will directly engage in implementation, such as teachers and administrators, to help identify priorities and clear learning objectives for the audience. It is important to remember that these objectives need to be achievable by children.

Develop content that is engaging and fun for the target audience. Define simple key messages and design curricula and content that will convey those messages in a fun, easy-to-understand way. Ensure that the content and materials can be easily implemented by the facilitators (teachers, community workers, and health practitioners).

Create a routine to encourage handwashing throughout the school day. Schools provide a unique environment to encourage handwashing at key times in the day. Because teachers can shape a child's routine throughout the day, it is possible to build in a routine time for handwashing, such as before lunch, to encourage the habit of handwashing at key times. Getting children into the habit of washing their hands as part of a daily school routine can help ensure this practice becomes part of a child's lifelong habits.

Include the larger community. Handwashing programs should understand the power of children as change agents, focusing on empowering children to share what they learn with others. For children's learning to have the maximum impact at home, parents and community members should also be intentionally engaged. Getting buy-in from parents will not only make them more receptive to handwashing messages but can also lead to stronger community support for school infrastructure improvements and maintenance.

Handwashing infrastructure and the availability of soap and running water are essential for behavior change. Access to handwashing facilities and supplies are critical to promoting the day-to-day practice of handwashing with soap at critical times and reinforcing good handwashing habits. Schools need to secure the recurrent funding required for soap so they can sustain handwashing practices.

Logistics matter. Programming must be intentionally aligned with what is going on at the school. Consider school term schedules, holidays and festivals, exam periods, student matriculation cycles, and other items on the school calendar.

CASE STUDY

PHOTO CREDIT: WORLD VISION

Creating Handwashing Heroes through the *WASH UP!* School Program

In 2015, World Vision and Sesame Workshop launched *WASH UP!*, a school-based WASH program that targets children ages six to nine in remote, low-resource communities. The initiative aims to improve children's WASH knowledge and behavior by using engaging, play-based materials, such as storybooks and games. *WASH UP!* endeavors to create an ecosystem for children where they are interacting with key hand hygiene messages in school, learning from their teachers, and accessing infrastructure to support behavior change.

Working in 15 countries, *WASH UP!* has directly reached over 200,000 children, showing significant changes in handwashing knowledge for participating students. Research conducted in Zambia with grade one students showed a 61% increase in knowledge of germs.

The program also worked to sustain social impact by catalyzing a disruption in social norms around hand hygiene behaviors and through the power of educating children. For example, in Ghana, children took it upon themselves to build handwashing stations using local materials. In Zambia, children demanded soap from school management to practice handwashing. These incremental moments lead to communities where hygiene is a sustained part of the conversation, and where health behaviors are constantly reinforced at school, at home, and in communities.

Hand Hygiene in Health Care Facilities

Health care facilities are intended to be centers of healing, yet millions of people are affected by health care-associated infections each year. Recent estimates suggest that globally one in six health care facilities —and up to 40% of health care facilities in Sub-Saharan Africa —lack basic provisions for hand hygiene at points of care and near toilets *(WHO & UNICEF, 2019)*. Adherence to proper hand hygiene practices, including handwashing with soap, is critical to prevent the spread of infection in health care facilities and ensure the safety of health care workers, patients, and their visitors *(Centers for Disease Control and Prevention [CDC], 2019)*. On average, approximately 15% of patients in lower- and middle-income countries and 7% of patients in higher-income countries are affected by health care-associated infections *(Allegranzi, et al., 2011; WHO, 2018b; Watson et al., 2019b)*.

PHOTO CREDIT: GLOBAL WATER 2020

Capacity building should happen in institutions and across the system

Research shows that simple, cost-effective infection prevention and control (IPC) measures, such as appropriate hand hygiene practices, can reduce health care-associated infections by more than 50% *(WHO, 2018a)*.

In health care settings, hand hygiene through using an alcohol-based handrub or through handwashing with soap and water should be practiced at five critical moments identified by the WHO:

1. Before touching a patient
2. Before clean/aseptic procedures
3. After body fluid exposure/risk
4. After touching a patient
5. After touching patient surroundings *(WHO, 2009a)*.

Health care providers must know and understand proper protocols explaining why, when, and how to perform hand hygiene *(WHO, 2009b)*. They must also have the means to follow those protocols. Promoting hand hygiene in health care settings requires working with and through the health system to drive and sustain behavior change, and move beyond individual determinants to address systems and the enabling environment *(WHO, 2009c)*. Often, health systems are well established in countries, but basics such as water, sanitation, and hygiene are neglected in health care facilities *(WaterAid, n.d.)*.

WHO identifies eight core components that make IPC programs impactful and effective at the national and facility level and provides minimum requirements for achieving these core components at the country level *(WHO, 2019b)*. Evidence on hand hygiene supports all the core components with two strong recommendations on hand hygiene included in Components 6 and 8, which detail the need for materials and equipment to perform hand hygiene and the need for hand hygiene monitoring and feedback, respectively *(WHO, 2020)*. WHO strategies on hand hygiene in the context of IPC and WASH programs are described in the context of the UNICEF/WHO Hand Hygiene for All Initiative (See the section on Hand Hygiene for All in **Chapter 5: Addressing Handwashing at a Systems Level**).

The WHO multimodal hand hygiene improvement strategy, a core component of WHO's guidelines for effective IPC programs, highlights five elements to improve hand hygiene in health care facilities (WHO, 2009c). This includes addressing infrastructure and resources, training and education, monitoring and feedback, communications and reminders, and the institutional culture around hand hygiene. Programs must also target multiple parts of the health system, including governance, financing, research, and service

PHOTO CREDIT: WATERAID

Handwashing is critical for infection prevention and control

delivery, to ensure WASH infrastructure is in place and that recurrent budgets provide ongoing operations and maintenance to support handwashing.

Systems and procedures to procure, deliver, and manage resources are critical to ensure the necessary hand hygiene infrastructure is in place. This includes funding for a continuous supply of hand hygiene products and infrastructure, such as hand hygiene stations at all points of entry, points of care, and near toilets. Access to appropriate facilities and supplies can support frequent and effective hand hygiene action during critical moments of care. Using WASH FIT's "essential indicators" can help to quickly identify key gaps and guide the implementation of facility improvement plans *(WHO, 2018b)*. Proper training on hand hygiene protocols to build capability is also critical for all members of the health care workforce *(WHO, 2019b)*. Effective training goes beyond simple didactic classroom messaging, and includes innovative approaches with activities informed by adult learning theory, such as team- and task-based strategies and bedside mentorship. Training models widely used in many resource-limited settings —such as step-down training —may not reach all members of the health care staff and do not address the need for follow-up or refresher training over time. Pre-service training in hand hygiene should be institutionalized for all clinical staff, in particular doctors, nurses, midwives, and allied health professionals, and hand hygiene should be a core part of routine in-service training for all, including cleaners and auxiliary staff. Iterative and innovative models for training are needed.

The effective use of audit and timely feedback has been associated with improvements in clinical practice as supportive supervision models that encourage good hygiene behaviors instead of penalizing poor ones. In addition, IPC committees must be active and hand hygiene should be routinely monitored at the facility level to ensure sustained adherence to good hand hygiene. WHO core component 6 emphasizes monitoring and feedback, and includes an auditing process as part of a quality improvement process that seeks to improve patient care and outcomes. As part of this IPC core component, hand hygiene monitoring and feedback in health care facilities is strongly recommended by WHO as a national performance indicator.

Performing hand hygiene at the point of care, preferably using alcohol-based handrub products if available, or with soap and water if hands are visibly soiled (and using gloves, when recommended) is the basis of IPC. Proper hand hygiene, including handwashing with soap, must be practiced by all in health care facilities, including health care workers, staff, patients, and visitors. WHO strongly recommends that hand hygiene materials and equipment should be readily available at all points of care and toilets *(WHO, 2019b)*. Overcrowding in facilities increases the risk of infection transmission, which further highlights the need for all visitors and health care workers to protect themselves and others through proper hand hygiene.

CASE STUDY

Improving Hand Hygiene in a Health Care System

Nkwan Jacob Gobte is a nurse and infection prevention supervisor in Cameroon. When he was originally appointed as an infection and prevention control (IPC) nurse in 2002, his hospital was experiencing frequent outbreaks of neonatal sepsis, which is caused by bacteria and is a consequence of poor hand hygiene and disinfection practices.

Nkwan and his colleagues changed IPC behavior by conducting trainings (teach it), providing appropriate supplies (build it), and empowering facility leaders to take ownership (live it). As a first step, Nkwan facilitated training and education sessions and held one-on-one discussions with hospital staff on the importance of IPC to keep patients safe. Despite some initial resistance, 80% of staff members improved their knowledge of basic IPC principles, including hand hygiene.

At the time, no alcohol-based handrub was available at the hospital, which made it difficult to practice hand hygiene during WHO's five moments. To address this lack of supply, Nkwan and his colleagues decided to produce handrub with locally available ingredients, using the formula recommended by WHO and following specific safety procedures. Within a few months, the hospital staff was making enough handrub to place containers at all workstations and points of care.

With the supplies and knowledge in place, Nkwan looked to the piece that would allow the improvements to be sustained: ownership. He convinced the top leadership of the system to prioritize IPC in their facilities. This buy-in resulted in two major policy changes: an IPC nurse was appointed at each facility, and every clinical staff member was required to carry handrub in a pocket for use at points of care. Read Nkwan's full hand hygiene profile here.

PHOTO CREDIT: GLOBAL HANDWASHING PARTNERSHIP

Handwashing in Fragile and Conflict-Affected Settings

In settings where there has been an infectious disease outbreak, natural disaster, armed conflict, or forced displacement, the social and physical environments of the affected population are disrupted. Water and sanitation systems are often damaged, and health systems become overburdened or dysfunctional. Such situations create the ideal environment for the spread of pathogens.

It is estimated that 40% of all mortality in the acute phase of a crisis is due to diarrheal diseases *(Connelly et al., 2004)*. Children are particularly vulnerable. For example, during conflicts, children younger than five are 20 times more likely to die from diarrhea than from violence itself *(UNICEF, 2019b)*.

Handwashing interventions in fragile and conflict situations should follow the same principles as handwashing programs in any other settings. However, the following circumstances make humanitarian contexts unique in terms of both programmatic constraints and the circumstances that may influence handwashing behavior:

Program cycles may be shorter. The multiple stages of hygiene program design often need to be condensed and simplified to rapidly respond to needs during an infectious disease outbreak or humanitarian crisis.

PHOTO CREDIT: WASH'EM

Fragile and conflict-affected settings provide a myriad of contexts and challenges

Governments or NGOs are often responsible for providing handwashing facilities, soap, and water, in contrast with stable settings, where populations are usually partially or fully responsible for purchasing handwashing products.

Time, resources, and capacity may be limited during a crisis. Hygiene promotion is likely to be one of many interventions designed to respond to the needs of the affected population and improve wellbeing, resulting in many competing uses for scarce resources.

The disruptive effects of conflict and fragility influence people's behavior. The determinants of behavior in such settings may be distinct from those in stable settings *(White et al., 2020)*.

In fragile and conflict settings, providing access to conveniently located, desirable handwashing facilities with soap and water is likely to be the most effective way of changing behavior. **Table 7** provides a list of products that have been demonstrated to be effective in promoting hand hygiene in emergencies, whether through handwashing with soap or alternative practices.

Table 7: Products in Emergency Settings

Product	Description	Source
Jengu Handwashing Facility	Jengu is an open-access handwashing facility that can be built locally or procured. It was designed through reviewing the literature and consulting with crisis-affected populations and humanitarians.	*Jengu, n.d.*
Promotion and Practice Handwashing Kit	This kit contains a water container and dispenser for making a handwashing station that is affordable, durable, desirable, and easy to construct. This kit also contains soap and handwashing reminders.	*Elrha, n.d.*
SuperTowel	This product is designed to be an alternative to handwashing with soap. It is a microfiber towel with an antimicrobial treatment. Users dip it in a minimal amount of water and rub it on their hands. The SuperTowel is particularly useful for settings where water and soap are scarce and for populations on the move.	*Torondel, Khan, Holm Larsen, & White, 2019; White, Petz, Desta, Holm, & Larsen, 2019*
Surprise Soap	This soap has a toy embedded inside. Children using this product were found to be four times more likely to wash their hands with soap.	*Watson et al., 2018*

The following approaches for designing and delivering handwashing programs have been tested in fragile and conflict settings and deemed feasible and appropriate by various organizations:

- **Wash'Em:** The Wash'Em process is specifically designed for emergency contexts. This program design process is guided by a set of five easy-to-use rapid assessment tools, which are linked to a software that translates assessment insights into program activities. Wash'Em has been used by various humanitarian actors as well as national WASH clusters and typically allows for program design within one week (see **Table 2**).
- **Barrier Analysis:** Barrier Analysis is a commonly used survey-based approach for identifying the key determinants of behavior. It has been used by multiple health and development actors in a range of settings, including fragile and conflict settings (See **Table 2**).
- **Mum's Magic Hands:** *Mum's Magic Hands* has been developed by Oxfam and Unilever. It provides a set of interactive behavior change activities that are based on storytelling and emotional drivers. The package can be easily adapted to different contexts and has been tested in several emergency settings (see **Case Study** on following page).

CASE STUDY

Improving Lives in Emergency Settings through Handwashing with Soap

PHOTO CREDIT: UNILEVER

Refugee communities and people affected by floods, earthquakes, or other natural or man-made disasters are among the most vulnerable to disease. Lifebuoy teamed up with Oxfam to create a customized program that goes beyond simple product donation, seeking to influence behaviors in settings where crowding and diarrheal disease are high.

Every situation is different, so the team spoke to women who were affected by different emergencies—in Nepal, Pakistan, and the Philippines—to better understand the challenges faced in day-to-day life. Unilever and Oxfam also identified the barriers and motivators to behavior change in each of these settings. In response, they developed *Mum's Magic Hands*, a program that reaches mothers, based on universal insights that can work even in extremely difficult settings.

The program was piloted among mothers across earthquake-affected areas in Nepal and was successful in improving knowledge and practice of handwashing with soap during critical moments throughout the day, such as before eating and after going to the toilet. Since then, the program has been expanded to more than 10 countries.

The Nepal program showed significant increases in the practice of handwashing with soap before eating and preparing food (18% and 17%, respectively).
The program also proved to significantly increase the practice of handwashing with soap after going to the toilet; post-intervention, 45% more mothers were observed washing their hands with soap.

Personal hygiene, including handwashing behavior, suffers when people experience psychological distress, as is often the case in fragile and conflict-affected settings. It is important to ensure that the approach to handwashing improvement in these settings is sensitive to the broader needs of the population. For example, the program manager or director may want to explore how a hand hygiene program can be integrated into mental health and livelihoods programming.

During crises, people are also often stripped of their agency (forced to rely on what organizations provide) and dignity (forced to live in circumstances that are much worse than what they are used to). Hand hygiene programs can be designed to help people deal with these circumstances. For example, humanitarians should try to provide soap and handwashing facilities that are nice to use.

Collaboration is an important consideration in the design and delivery of handwashing programs in fragile and conflict settings. While collaboration between different NGOs and branches of government is important in all settings, it is especially critical in emergencies, where programming can easily become chaotic or duplicative.

Handwashing in the Workplace and in Public Places

Handwashing with soap is one of the most effective ways to avoid getting sick and spreading illness in public spaces, such as a workplace or marketplace *(CDC, 2016)*. In a public place, the risk of spreading disease is often high because people are in close proximity and share eating areas, workstations, toilets, and other areas that harbor germs.

Workplaces, whether formal (office) or informal (roadside stand), can be breeding grounds for viruses and bacteria that can survive for an extended period of time on shared surfaces and spread between individuals via direct or indirect contact *(University of Iowa, 2013; Reynolds et al., 2015)*. Office surfaces host high bacterial counts, with the highest germ content found in shared spaces such as break rooms, kitchens, and bathrooms *(DeNoon, 2012)*. Likewise, informal workspaces, such as food stands, are also a key place for disease transmission *(Soon, Baines, & Seaman, 2012)*.

PHOTO CREDIT: CAWST

Hand hygiene can be a particular challenge in public places

Proper hand hygiene, including handwashing with soap, has shown a significant reduction in employee sick days and self-reported acute respiratory infections and influenza *(Hubner et al., 2010; Stedman-Smith et al., 2015)*. Despite the evidence, many people often ignore this health-saving practice in workplaces and other public settings. Unplanned absences from work and sick employees can cause a loss of productivity.

Studies suggest that implementing hand hygiene programs at work and in other public settings can increase hand hygiene compliance *(Arbogast et al., 2016; Hubner et al., 2013; Savolainen-Kopra et al., 2012)*.

The following are important considerations for encouraging handwashing at work, in marketplaces, and in other public spaces:

- **Provide access to handwashing stations with running water and soap.** Handwashing stations with running water are the basic facilities needed for the practice of proper handwashing. Soap dispensers must be kept full and functioning. If a workplace does not have a maintenance team, creating a schedule for workers to monitor supplies of handwashing materials can create accountability for full access to the means of handwashing.
- **Offer alcohol-based handrub (hand sanitizer).** Placing handrub dispensers throughout a workplace can also encourage regular hand hygiene practices when soap and water are not available. Washing hands with soap and water is the best way to completely remove germs from hands, but alcohol-based handrub can kill harmful bacteria and is considered a good alternative if soap and water are not available.
- **Use signage and posters.** Signs and posters in key areas, such as toilets and kitchens, can remind people to wash their hands at critical times. Remember to change messages frequently, because the same sign or poster is often ignored after being seen routinely. Social pressure to wash hands around the workplace can also improve handwashing practice among workers, and management should provide leadership and also encourage employees to step forward as handwashing advocates in the workplace.

Mainstreaming Handwashing Behavior Change Into Other Interventions

A wealth of evidence supports integrating handwashing into related interventions. Handwashing has broad-reaching benefits and can have a positive impact on a range of development sectors. Handwashing therefore can, and should, be integrated into related development programs, policies, and initiatives. Integration of handwashing can be effective in sectors such as education, health, nutrition, early child development, and equity and inclusion programming.

Education

Handwashing as part of a full package of WASH services for schools is an important complementary element to education programming and can improve school attendance and teacher-pupil interaction time. Schools also provide a key venue for promoting handwashing with soap during the formative years of students, when many habits are being developed. Please refer to the **WASH in Schools** section in this chapter for a discussion on implementing this synergistic programming.

Health

Adoption of appropriate handwashing is needed at scale to achieve numerous health goals. The need for handwashing in health care facilities was discussed earlier in this chapter, but the potential synergies of integrating hand hygiene and health go far beyond health care settings. Hand hygiene can contribute to better health outcomes for mothers, children, people living with HIV/AIDS, and others. In addition, it is an essential part of responses to outbreaks of diseases, such as cholera or COVID-19.

Children are often at particular risk for diseases related to poor water, sanitation, and hygiene. Proper handwashing access and practice is a critical step in reducing illness and deaths. For example, schoolchildren who wash their hands are up to 50% less likely to contract pneumonia and experience diarrheal episodes— two of the leading global killers for children *(Luby et al., 2005; Luby et al., 2006)*. Likewise, children receiving handwashing interventions were 68% less likely to have intestinal helminth infections in Ethiopia *(Mahmud et al., 2015)*.

Handwashing integration is also critical for other vulnerable groups, such as those living with HIV/AIDS or those with other pre-existing conditions. Programs should include behavior change programming on washing hands at critical times and with proper technique across programs. It is important to integrate WASH policies and guidance into overall HIV programs and policies, as handwashing impacts are closely linked with the health outcomes of this group *(WHO & USAID, 2010)*.

Integrating handwashing into other health programs, including outbreak prevention, maternal and child health, and neglected tropical diseases (NTDs), can help these programs achieve their overall goals. For example, handwashing with soap can reduce the transmission of soil-transmitted helminths and other NTDs. Integrating handwashing can help increase public trust for NTD treatment

PHOTO CREDIT: ESSITY

Handwashing has cross-cutting impact across different programming

programs, such as mass drug administration, and reduce the likelihood of reinfection among treated populations *(WHO, 2015a)*. Integrating hand hygiene promotion alongside vaccines can also maximize the impact on a child's health. A caregiver may come to a vaccination clinic more than five times over the first two years of a child's life. Leveraging these routine visits to improve the handwashing practices of the child's caregiver can ensure an even greater impact on child health.

Because handwashing and essential nutrition activities all rely on mothers and other caregivers, the integration of handwashing and nutrition programming can occur seamlessly. After all, families do not divide their day into different sectors; all these activities are part of the life of a family.

Nutrition

The "first 1,000 days" from conception to a child's second birthday plays a key role in the lifelong wellbeing of the individual. Undernutrition of the mother or child during this time can lead to stunting and its life-long consequences, affecting cognitive function, earnings, and even next-generation birth outcomes *(Crane, Jones, & Berkley, 2015; Sharp & Estes, 2010)*. Without good hygiene practices and a safe, clean environment, children suffer from repeated diarrhea, intestinal worm infections, and fecal-oral contamination *(WHO, 2008; WHO, UNICEF, World Bank Group, 2018)*. Hand and food hygiene for children when complementary

CASE STUDY

Integrating Handwashing with Vaccination Programs in Nepal

In 2014, WaterAid partnered with the Family Welfare Division of Nepal's Ministry of Health (formerly the Child Health Division) to launch a novel pilot project at scale. This initiative explored whether integrating hygiene into routine immunization could strengthen the vaccination program, improve behaviors, build capacity among health workers, and offer a sustained mechanism for integration. A behavior change intervention was designed through a creative process informed by formative research. The hygiene promotion program was implemented in four districts targeted to caregivers or guardians of children younger than one year of age. Approximately 35,000 caregivers were exposed at least five times to creatively designed hygiene intervention activities within a year. A central motivator promoted in these activities was to be an "ideal family."

To create a social desire for key behaviors among caregivers, the program used engaging hygiene activities, such as games, stories, competitions, songs, public commitments, and rewards. During a 45-minute educational session conducted before each vaccination, five key behaviors were reinforced: exclusive breastfeeding, food hygiene, handwashing with soap, household water and milk treatment, and hygienic use of the toilet, including the disposal of children's feces. Visual props and cues, such as branded mirrors, baby bibs, fans printed with key behaviors, and messages printed on a vaccination schedule, were used to reinforce these nutrition and hygiene behaviors.

Third party evaluators measured project outcomes after one year of implementation. The outcome evaluation showed that the integrated project was effective in changing behaviors, achieving a 51% increase in the number of caregivers who reported practicing the five nutrition and hygiene behaviors. The intervention strengthened routine immunization coverage, reduced drop-out rates, and built confidence among health workers to implement such novel approaches.

After the successful pilot, the government of Nepal retained the program in the four districts and made a policy decision to expand it nationwide (77 districts total), with a target population of 650,000 annually.

foods are introduced at six months and continued through 24 months is especially critical, given the precipitous rise in diarrhea when foods and water are first introduced to infants. Though there is much left to understand about the condition, there is mounting evidence that environmental enteric dysfunction (EED), a chronic inflammation of the small intestine, can weaken the body and prevent optimal absorption and utilization of nutrients, and impair linear growth in infants and young children *(Lauer, 2020)*. Poor WASH conditions can expose the gut to large quantities of harmful microbes and this has strong biological plausibility to be a cause of environmental enteric dysfunction. Having both an inadequate diet and poor WASH conditions can predispose infants and young children to a debilitating life, restricting cognitive and physical development to an extent that cannot be made up in the course of a lifetime *(USAID, 2018a)*.

However, findings from three large-scale randomized controlled trials (RCTs) have brought into question the impact of WASH programming on child growth and diarrhea in poor communities, including how clean the child's environment needs to be to achieve a significant impact on child health and whether common WASH programming achieves that level of impact *(Null et al., 2018; Luby et al., 2018; Humphrey et al., 2019; Cumming et al., 2019)*. UNICEF & WHO (2019) concluded that the three RCTs highlight the need for implementation of WASH programming on a systems level, with greater investment in governance for leadership, policy, planning, financing, capacity building, and monitoring as discussed in **Chapter 5: Addressing Handwashing at a Systems Level.** Also, other studies suggest the need to focus on multisectoral approaches in the early years to ensure a hygienic, stimulating, and nurturing environment that enables children to reach their full potential *(Britto et al., 2017)*.

Despite multiple commitments to integrate WASH, including handwashing, into nutrition programs, additional progress is needed to optimize this synergistic programming *(WHO, UNICEF and USAID, 2015)*. A more concerted effort to make handwashing a priority is needed to prevent the loss of nutrients and break the vicious cycle of undernutrition resulting from diarrhea and other infectious disease.

To address this gap, several stakeholders have developed guidance and support documents for WASH integration into nutrition and food security programming. Handwashing and other WASH interventions can be integrated with nutrition and food security programming in various ways to meet the conditions, opportunities, and restraints of the situation. Case studies from Africa, Asia, and Latin America have examined different methods of integration, including national nutrition programs with a WASH component, large-scale projects aimed at reducing malnutrition through a cross-sectoral approach, WASH interventions integrated into nutrition programming during humanitarian emergencies, and the co-siting of WASH and nutrition activities in nutritionally vulnerable geographic areas *(WHO, UNICEF, U.S. Agency for International Development [USAID], 2015)*.

Not only should the designers of nutrition programs consider how to include handwashing and other WASH elements, but WASH program implementers should consider how they can address nutrition as part of an integrated approach to expand their impact on broader outcomes, especially for children.

Early Childhood Development

Early childhood development (ECD) includes physical, socio-emotional, cognitive, and motor development during a child's first eight years of life *(WHO, n.d.)*. These are the years when the brain develops most rapidly, especially during the first 1000 days. Early childhood development forms the foundation of the life of each individual. Thus, early childhood development ultimately contributes to all development goals, and several other areas contribute to early childhood development. One study found that promotion of handwashing for young children resulted in those children scoring better on a detailed test of their development when they were between five and seven years old *(CDC, 2012)*. Synergies between WASH, nutrition, and early childhood development for the wellbeing of young children inspired the formation of the Clean, Fed and Nurtured Initiative (cleanfednurtured.org).

UNICEF, WHO, and other development and educational agencies address this window of opportunity of the first eight years, through actions tailored for each age cohort to maximize children's developmental outcomes, with handwashing playing a role for each of those cohorts. The focus of integrated programming and policies should be on children and mothers, as well as other influential caregivers such as fathers, grandmothers, and siblings *(Dodos, 2017)*. Actions to support a child's handwashing can begin before a child is even born by installing a handwashing station, which sets the stage for early handwashing for the child. During the neonate period (the first 28 days of life), integrating handwashing by caregivers as a step before picking up an infant can have a tremendous impact on neonatal survival and subsequent development *(Rhee, Mullany, & Khatry, 2008)*. In addition, washing a child's hands provides another opportunity for a caregiver's nurturing actions to positively influence a child's early development. During the early years, children are at a time with high capacity for change, and thus creating the habit of handwashing lays the foundation for health and wellbeing throughout one's entire life *(Cusick and Georgieff, n.d.)*.

PHOTO CREDIT: ESSITY

Handwashing can be an important tool in early childhood development

Equity and Inclusion

Hand hygiene interventions can contribute to equality and empowerment by providing opportunities for women, girls, people with disabilities, older adults, and other groups to take on new leadership roles rather than being passive beneficiaries of predesigned interventions. This is critical and directly impacts many; e.g., children and adults with disabilities make up an estimated 15% of the world's population *(UNICEF, 2020)*. However, making handwashing programs and policies inclusive and respectful of all people does not just happen automatically. It requires deliberate focus and the intentional involvement of specific groups.

PHOTO CREDIT: WATERAID

Programs must focus on equity, including designing and locating handwashing facilities to be accessible and user-friendly for everyone. Hand hygiene messages should be communicated in a way that reaches everyone, including those who have difficulties with seeing, hearing, understanding, or moving, and handwashing illustrations should represent the true diversity of communities *(Wilbur, 2020)*.

Responsible hand hygiene interventions must avoid perpetuating gender stereotypes or contributing to harmful norms. Instead, they can play a role in encouraging inclusion and empowerment by promoting equal gender roles. For example, communication messages could emphasize a woman's role as a professional or leader, in addition to those of a wife and mother. Handwashing messaging should represent people with disabilities with dignity and as active agents of change in society.

Chapter Takeaways and Resources

Handwashing has cross-cutting effects in many different contexts. It is important to understand how handwashing can be optimized for contexts such as schools, health care facilities, and other public places. Likewise, handwashing should be integrated into other health and development initiatives to leverage impact. Key takeaways from this chapter include:

- **Identify handwashing priorities based on the context and audience.** Developing content that is specific and engaging to a target audience is critical to ensure handwashing behavior change among different populations.
- **Connect handwashing with other related development issues to optimize health and development outcomes.** The integrated nature of the Sustainable Development Goals challenges practitioners and policy makers to adopt strategies that will lead to benefits across multiple areas. Integrating handwashing into related health and development initiatives can drive progress across the SDG agenda.

Additional Resources for Improving Handwashing in Specific Contexts

- **Global Handwashing Partnership.** Hand Hygiene Profile Series. This series provides case studies highlighting handwashing heroes in health care settings.
- **ACF.** WASH'Nutrition. This practical guidebook provides recommendations for increasing nutritional impact through integration of WASH and nutrition programs.
- **Essity/Tork.** Tork "Safe at Work" Toolkits. These toolkits can support businesses in creating a safer work environment through hand hygiene. Current toolkits are available to support governments, health care facilities, food services, manufacturers, groceries and pharmacies, educational institutions, and office buildings.
- **GIZ and UNICEF.** Scaling Up Group Handwashing in Schools: Compendium of Group Washing Facilities Across the Globe. This publication introduces the concept of group handwashing and discusses the principles and basic requirements for handwashing facilities.
- **Global Water 2020.** Ten Immediate WASH Actions in Healthcare Facilities for COVID-19 Response. This brief describes ten immediate WASH actions that low-resource health care facilities can undertake with a limited budget and compiles resources for action in health care facilities.
- **International Labor Organization.** Hand Hygiene in the Workplace: Policy Brief. This policy brief emphasizes that safe and healthy working conditions are fundamental for decent work conditions and highlights the need for hand hygiene to prevent the spread of diseases in a work setting.
- **UNICEF.** Field Guide: The Three Star Approach for WASH in Schools. This field guide provides an overview of the Three Star Approach and how it can be applied to improve WASH in schools.
- **WaterAid Australia.** Towards Inclusive WASH: Sharing evidence and experience from the field. This publication provides a practical guide to achieve equity and inclusion in WASH programming around the world.
- **WHO & Neglected Tropical Disease NGO Network.** WASH and Health Working Together: A 'How-To' Guide for Neglected Tropical Disease Programmes. This toolkit provides step-by-step guidance on how the WASH and NTD communities can engage with one another and work collaboratively to improve delivery of water, sanitation and hygiene services to underserved populations affected by many neglected tropical diseases.
- **WHO, UNICEF, & USAID.** Improving Nutrition Outcomes with Better Water, Sanitation, and Hygiene: Practical Solutions for Policies and Programmes. This document summarizes the evidence on the benefits of WASH for improving nutrition outcomes and describes how WASH interventions can be integrated into nutrition programs.

CHAPTER 5

Addressing Handwashing at a Systems Level

PHOTO CREDIT: FHI

Despite its simplicity, handwashing is a complex issue. If handwashing is to be practiced universally and sustainably across a country, focusing on the handwashing behavior of individuals is not enough. Creating an enabling environment to support the scale-up of handwashing requires a focus on the whole system, including the many actors and their interrelationships, which can enable handwashing to be practiced at homes, schools, workplaces, health care facilities, and other public settings. The focus on local systems for handwashing at the national, regional and community levels is based upon the understanding that "achieving and sustaining any development outcome depends on the contributions of multiple and interconnected actors" *(USAID, 2014)*.

PHOTO CREDIT: UNITED PURPOSE

DEFINITION

What is a Local System?

A local system is the interconnected set of actors that jointly produce a societal outcome. "Local" refers to actors in a country and can be at the national, provincial, district, and community level.

Building Blocks for Handwashing

System "building blocks" are one way to understand and tackle the complexities of the system to support handwashing. Sanitation and Water for All (SWA) defines the building blocks for systems as: coordination and institutional arrangements; policies and strategies; financing; planning, monitoring, and review; and capacity development (see **Figure 8**). The interactions and collective performance of these fundamental elements of the larger system are what allows the system to function and strengthening these building blocks will strengthen the system. For handwashing practice to be optimally scaled up and maintained, every actor and every element of the system must function effectively. An indication of how effective these building blocks are functioning can be found in the reports of the WHO/UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) initiative, particularly the 2020 report on hygiene *(WHO & UN Water, 2020)*. The report examines national policies, plans, targets, and finance. It shows that countries often have national policies and plans for hygiene; however, they lack the financial and human resources to fully implement the policies and plans to improve hygiene, such as handwashing with soap. By assessing these building blocks and the linkages between them in more detail, practitioners can identify specific gaps to target in interventions, to achieve larger impact.

Figure 8: SWA Handwashing Building Blocks

Coordination and Institutional Arrangements

The aim of systems thinking is to identify, understand, and amplify approaches that build on complex synergies and relationships among a myriad of stakeholders and actors. At a systems level, achieving and sustaining handwashing outcomes depends on all the actors in a system doing their part to promote handwashing and viewing handwashing as essential to achieving their objectives, with government agencies providing appropriate leadership *(IRC WASH, 2018a; WaterAid, 2017; USAID, 2014)*. These actors include the private sector, civil society organizations, faith-based organizations, funders, and government entities across different ministries, from the community to the national level.

DEFINITION

Institutional arrangements

refer to formal relationships and mechanisms for communication, collaboration, and coordination among the key actors in a country.

The ministries responsible for health and water resources are usually charged with ensuring a hand hygiene directive and more generally assure the quality of water, sanitation, and hygiene services. While institutional arrangements vary, these ministries play a leadership or coordination role, integrating WASH into long-term initiatives. It is critical that the leaders of the system understand the capacity and resources that each organization has available to perform its role in the system to support handwashing as well as the coordination mechanisms among these organizations. Coordination mechanisms should be inclusive, allowing for participation of a broad range of stakeholders in dialogue and identification of mutual interests in service delivery and hand hygiene learning.

Mapping the system can provide a better understanding of the actors, resources, and coordination mechanisms that affect handwashing in a country (See the **Tips for Building the System** section of this chapter for more detail on mapping the system). Leveraging the whole local system can ensure there are no major gaps in the enabling environment, and leads to greater sustainability, adaptability, and accountability. It is critical that actors understand their roles and their needed interactions with others; policies and strategies can help to provide clarity for these roles and coordination, as shown in the next section.

Policies and Strategies

Policies and strategies are mechanisms by which a government sets out its vision (policy) and determines its plan of action (strategy). This process includes establishing objectives and setting national standards for hand hygiene, which have cross-cutting effects across multiple sectors. National policies should identify targets to improve handwashing infrastructure and provide guidance on strategies and institutional arrangements for achieving those targets. Policies that include timebound targets to benchmark advances in scaling up hand hygiene can help catalyze and motivate continued progress on increasing the uptake of hand hygiene, especially through handwashing with soap *(WHO and UNICEF, 2020)*.

Policies and strategies should provide guidance for investment to support hand hygiene. Clear policies and strategies can help define the institutional arrangements, responsibilities, and interactions of different actors. They can also help clarify ownership, management, and accountability mechanisms for WASH services within institutions. Comprehensive mapping of policies that address handwashing across agencies can provide an understanding of how handwashing policies and strategies are prioritized. Some agencies have stand-alone handwashing policies and guidelines, but it is more common for handwashing to be incorporated into national policies and frameworks for sanitation, health, or other related topics. For example, in Mali, both handwashing stations and latrines are requirements for communities pursuing Open Defecation Free certification *(WHO, 2015b)*.

Policies should also be utilized at institutions, such as schools or health care facilities, yet the development and use of policies for institutional settings are often overlooked.

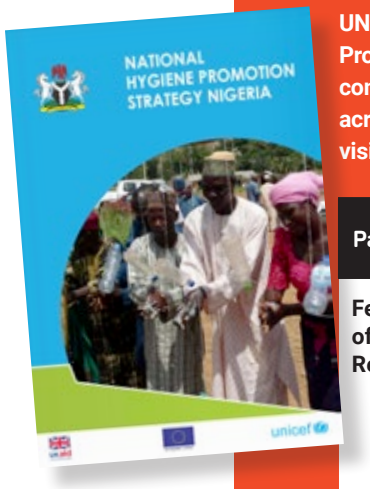
Examples of such policies for institutions include requiring handwashing prior to food preparation at a school or handwashing for birth attendants at a health care facility. Another example of a strategic policy to support handwashing is one that requires budgeting for the construction and maintenance of water supply and handwashing infrastructure, for any building project at an academic institution.

Policy frameworks for countries and institutions can provide clarity on roles and responsibilities for management, from funding to daily maintenance.

PHOTO CREDIT: UNICEF

CASE STUDY

Nigeria's National Hygiene Promotion Strategy



The Nigeria Federal Ministry of Water Resources, with the support of UNICEF, DFID, and the European Union, developed the National Hygiene Promotion Strategy, along with guidelines for hygiene promotion in communities and schools. The strategy serves to support people across the country in sustaining hygienic behaviors and brings high visibility to hygiene promotion activities. Find the full strategy here.

Hygiene promotion interventions are cross-cutting, and this strategy contributes to child health, education, and overall development in the country. Thus, partnerships are needed among various stakeholders from all levels of the system (national, state, community, and schools). The table below highlights some of the partners in this strategy and their roles and responsibilities.

Partner	Roles and Responsibilities				
	National	State	Community	School	Timeline
Federal Ministry of Water Resources	Policy development, engagement with partners and donors, monitoring, coordination	Implementation of community-led total sanitation, including training for CLTS and hygiene promotion	CLTS triggering by local government area team, training of volunteers and health professionals, monitoring activities	Providing water and sanitation facilities	Until 2025
Federal Ministry of Health	Policy development with childhood-related diseases, link hygiene promotion with nutrition and other related issues	Identify and focus on malnutrition-sensitive areas, diarrheal infection, cholera, and related areas	Train and sensitize relevant groups at community level for hygiene promotion and CLTS activities	Support daily handwashing activity in each school and the adoption of hygiene habits by pupils	Until 2025
Donors	Increase financial aid to support every Nigerian adopting good hygiene practices	-	-	-	Until 2030
Civil Society, NGOs	Build an environment that supports hygiene promotion	Help states to build a supportive environment for hygiene promotion	Support communities to build a supportive environment for hygiene promotion	Support schools to build a supportive environment for hygiene promotion	Until 100% of objectives are achieved

There are several pitfalls related to policies and strategies that should be guarded against in scaling up handwashing. One issue that can arise from handwashing being included in broader policies or strategies, rather than as a stand-alone hand hygiene focus, is that handwashing does not receive appropriate priority in the documents or in the programming being completed in accordance with the documents. Another common issue is that much of the handwashing programming is completed by NGOs and CSOs, which may not follow the requirements and guidelines of the handwashing policies and strategies. The work of NGOs and CSOs is critical in their support of handwashing, as can be seen in the example of the Nigeria strategy. Even while these organizations are trying to support handwashing, when they do not follow the government vision for handwashing, they can cause negative effects upon the country system that is supporting handwashing. Another issue is that often there are good policies and strategies, but there is a lack of funding for implementation, which leads us to the next system building block of financing.

Financing

Systems level support for sustained handwashing uptake requires enough funding to cover current and future costs. Realistic, transparent budgets with funding streams identifiable for handwashing are needed. Countries with established national hygiene policies and plans should make sure the plans are costed and that financial and human resource needs will be met for implementation of the plans. Scaling up handwashing will require substantial investments in upgrading or maintaining facilities and infrastructure, completing formative research to design effective behavior change programming, promoting hand hygiene practices, and integrating hygiene in government processes such as planning, monitoring, and review. Budgets at different administrative levels must address handwashing needs if the targets for hand hygiene are to be achieved.

However, current levels of funding to support handwashing are largely inadequate for support of the scale-up of handwashing. Strengthening finance means improving existing financing mechanisms and increasing the overall flows into WASH and related sectors (IRC WASH, 2018b). Hand hygiene actors can advocate for allocation of

PHOTO CREDIT: FHI 360

"Countries with established national hygiene policies and plans should make sure the plans are costed and that financial and human resource needs will be met for implementation of the plans."

budget lines for handwashing programs where they do not currently exist or are inadequate. While many of these advocates are outside of government, there is a need for handwashing advocates within governments to make a strong case for funding to support handwashing.

The benefits of handwashing are compelling for a government or agency's related interests, especially when the perceived threats to national health are considered more drastic, such as during a cholera or coronavirus outbreak. Even in normal health situations, the return on investment for handwashing, with the cost savings of productivity losses and health care costs avoided, provides a compelling case for officials responsible for public finance. Refer to the research findings in the **Making the Case Within Government** section in Chapter 2 for results from studies regarding return on investment.

Setting budgets based on hand hygiene targets and tracking hygiene expenditures can help develop a culture where hand hygiene investment is prioritized. In Uganda, for instance, providing a budgeting tool for hand hygiene and other WASH expenditures facilitated district-level allocations without the need for extensive advocacy *(WASHplus, 2014).* While there is evidence for a good return on investment for support of handwashing programming, tracking the cost and impact of handwashing programs within more national programs will further build the case for handwashing, especially for the country of the study, as well as for neighboring countries.

Planning, Monitoring, and Review

Government leadership is essential for allocating, directing, and coordinating internal and external resources in accordance with national priorities, strategies, and plans.

Scaling up and sustaining handwashing is best supported by a government-led, multi-stakeholder cycle of planning, monitoring, and learning. Where such sector planning processes are weak or not in place, partners should jointly support efforts to build and strengthen them. Just like there is often a need for advocates for greater budgets to support handwashing, handwashing advocates are needed to advocate for adequate planning, monitoring, and review for handwashing. Sometimes the best advocacy is to offer to help government colleagues to

Representatives from across the system are needed for planning, monitoring and review

PHOTO CREDIT: FHI 360

plan and facilitate the process for planning, monitoring, and review. In this way, the process is catalyzed, and steps need to be built into the process to ensure its long-term sustainability. And sometimes the advocacy starts with making the case that inclusive and systematic planning, monitoring, and review are needed to achieve systems-level goals to support hand hygiene.

When national handwashing plans and targets are set, systems for monitoring, evaluation, and review must be established. Key performance indicators should be defined in reference to national policies, plans, and targets, along with robust methods for gathering and using data. These methods should include monitoring systems to track the progress toward strengthening the enabling environment for hand hygiene as well as the progress in the practice of handwashing. Hand hygiene data collection should be mainstreamed into routine administrative data collection systems (e.g., management information systems) as well as surveys or spot checks (e.g., household surveys, regulatory checks) *(WHO and UNICEF, 2020)*. Existing monitoring and indicator systems include the WHO/UNICEF Joint Monitoring Programme indicators for hygiene in households, schools, and health care facilities, as well as the WHO/UNICEF Water and Sanitation for Health Facility Improvement Tool (WASH FIT) *(WHO & UNICEF, n.d.; WHO, 2018b)*. Progress towards systems improvement goals could be tracked in the GLAAS reports data. Reviews of performance through multi-stakeholder platforms and dialogue mechanisms are needed to optimize the learning for programming.

These planning, monitoring, and review processes should be accompanied by clear mechanisms for mutual accountability, in which decision makers and each group of actors can be held accountable *(IRC WASH, n.d.; UNICEF, 2019a)*. Accountability mechanisms should facilitate critical reflection on progress toward the uptake of handwashing, and support planning for adjustments in programs to optimize scale-up. For example, organizations can share achievements through a newsletter to stimulate sustained involvement. Monitoring and review should cover not only the implementation efforts of the system actors, but also cover the progress and health of the system itself. Acts of sharing information, loaning equipment, or formally agreeing to support an effort are indicators that the system is healthy and growing *(FHI 360, 2020)*.

PHOTO CREDIT: WELLBEING FOUNDATION AFRICA

Capacity development must be done across the system

Capacity Development

The enabling environment for hand hygiene requires skills, knowledge, and leadership to support the uptake of handwashing. Capacity building and development plans address the capabilities of institutions to fulfill roles and responsibilities at scale, including the availability of necessary structures, tools, training, and incentives *(Sanitation and Water for All, 2020)*. Individuals in different sectors and at various levels should have the capacity to effectively engage in the system to support handwashing through their roles as policy makers, researchers, implementers, funders,

PHOTO CREDIT: WSSCC

and advocates. People working in hygiene have diverse training and backgrounds, with some being health staff while others will be engineers, social scientists, and behavior change practitioners. One of the challenges for handwashing is that each of these professions may use different terminology about hygiene. Therefore, part of the capacity building needs to be learning the terminology of others in the system, so that good communication can be facilitated.

Mapping existing capacities can help planners identify gaps and opportunities for capacity development. Community health workers and other staff members will likely need training in the implementation of hand hygiene improvement activities. Investing in leadership development is also key at institutional and community levels. Building the understanding of return on investment for handwashing is important among finance ministry staff, as well as health and WASH professionals. Training personnel in providing supportive supervision is key to ensuring the various multi-sectoral responsibilities to support handwashing are carried out. Facilitating knowledge exchange can provide best practices and lessons learned for capacity building and development.

All stakeholders need to have the capacity to adapt their actions based on changing contexts, to support an enabling environment for handwashing. Throughout the system, capacity building needs to optimize the support for handwashing, and adequate budget and time need to be invested to ensure adequate capacity building is completed.

"part of the capacity building needs to be learning the terminology of others in the system, so that good communication can be facilitated."

Tips for Building the System

With the building blocks from earlier in the chapter to provide a guide for systems strengthening interventions, the tips for activities discussed in this section have proven to be valuable approaches to build reliable, sustainable, and resilient systems. Without leadership, no change to a system can be accomplished, so establishing the initial leadership for system strengthening is the first step in the journey toward a stronger system to support handwashing. Throughout the process, advocacy can be necessary to motivate actors to take the action that is needed to accomplish the change. Collaboration catalyzes strengthening of relationships between the organizations within the system, building up to the point of fostering collective impact. Another crucial early step in strengthening the system is to know it well and understand its current condition. This is accomplished through mapping the system. While establishing leadership for change and mapping the system are two of the first steps for system change, these steps are revisited throughout the system strengthening process. As the groups of the system come together for collective action, it may be desirable for a subset of the organizations, or all of them, to form national or subnational level handwashing partnerships. This helps to enhance the collaboration of partners to a higher level. Accountability is also an important element to ensure the system is functioning to support handwashing as desired.

Leadership for Systems Strengthening

Effective systems strengthening requires a leadership team with strong communications capabilities, as well as a good understanding of systems strengthening and how to support improved networking within a system *(FHI 360, 2020)*. Individuals from entities that have specific responsibilities for handwashing are natural candidates for a systems strengthening team for handwashing, since improving the system falls within their work responsibilities. However, if the team members do not have expertise in systems strengthening, expert technical assistance to support their efforts is recommended, and could possibly be provided by an NGO with systems strengthening expertise.

The systems strengthening team handles many of the tasks related to partnership coordination and relationship building. The team should remain neutral, while facilitating the flow of information among stakeholders representing diverse interests and agendas. Likewise, this team should maintain close contact with all stakeholders and support them in organizing events, sharing information, and maintaining focus on their commitments to collaborative action. In this way, the members of the systems strengthening team stimulate momentum and promote accountability for meeting the targets that groups pledge to meet. Sharing—and even publicizing—the fulfillment of these promises helps build collective enthusiasm and momentum.

DEFINITIONS

Systems strengthening team

A team that is formed to lead the improvement of networking and capacity building within a system

Cross-sector advisory committee

A group formed to make recommendations for the system strengthening process. It includes key groups across the network, as well as thought leaders who are experts in the development problem

The initial system mapping (see the **Mapping the System** section later in this chapter) becomes the basis for identifying and inviting core stakeholders into the systems strengthening process. A cross-sector advisory committee can be valuable in ensuring that viewpoints and expertise from the many relevant sectors are taken into account. This committee can further expand the system mapping process, ensuring a wider scope of related issues and stakeholders is included. Their knowledge from different experiences, viewpoints, and networks allows the understanding of the system to expand in multiple directions, shedding light on the complexity of relationships and underlying challenges.

A systems strengthening team and the cross-sector advisory committee should consider not only stakeholders who are actively engaged in handwashing and related issues, but also new partners (such as media, influential personalities, and religious leaders) who are important to any social change process. This growing list of individuals identified in the network can serve as an invitation list to the first formal system strengthening event (see **Foster Collective Impact** section later in this chapter).

Catalyze Collaboration and Build Social Capital

A focus on building social capital among system stakeholders from the outset can facilitate better system strengthening outcomes *(FHI 360, 2020)*. Social capital is essential for stimulating collective action within a system, and for sustaining that progress over time. Strengthening bonds within sectors and building bridges across sectors creates more social capital and catalyzes more momentum for change. Improvements in the level of communication among stakeholders and in the connection of their relationships is a condition for sustained collective action and impact.

The system that supports handwashing is "owned" by multiple sectors. Different sectors often speak "different languages," so learning how to listen and understand each other is an important foundational step. Also, the system may include marginalized populations who have far less power than other actors, but have important roles to play in collective action. It is essential that these populations have a voice in planning for handwashing behavior change.

DEFINITION

Social capital

is the strength of bonds within each group, as well as of the bridges to other groups within the system. It is developed through the growth of interpersonal relationships, shared goals, cooperation, and trust.

An example of a collaboration that could be leveraged to greatly improve handwashing practices is for handwashing behavior change programs to be closely linked and implemented in conjunction with water supply programs. This collaboration is catalytic for handwashing because the ease of obtaining water makes handwashing much less of a family burden, and this reduction of burden is especially true when families have piped water to their houses. These times of change of rapid development of a benefit for the household and community offer a unique opportunity to promote handwashing.

To support this collaboration, bonds need to be strong across two very different sectors: water supply professionals, who have an engineering and technical background; and behavior change specialists who have a very different background, focused on "soft" skills. Agreeing on collaboration for common goals

PHOTO CREDIT: FHI 360

Building social capital across the system

is a significant step towards establishing social capital, but working through a detailed planning process of how to coordinate these different activities builds even more social capital between the groups. Learning to speak each other's technical language is an important step for these two groups, since their professional terminology is so different, and any questions about terminology should be addressed in the planning process. It is not just language, but also approaches which differ, as water supply programming can have a much different schedule from behavior change programming. This can create conflict between the two groups, as the water supply group thinks that the handwashing behavior change group is holding up the pace of the intervention. However, recognizing potential conflicts ahead of time, and then planning for how issues will be addressed, also builds social capital between the groups—not just in the planning phase, but also when problems are addressed satisfactorily during the implementation phase.

Building professional relationships across the two groups is an important step in building social capital. One of the steps for building these relationships is to allocate time for interpersonal discussions and facilitating these discussions to explore personal or professional commonalities. Two people might think the other's profession is a mystery to them, but they also might find great commonality in their management style to motivate optimal performance through supportive supervision. Exercises to help groups within the system to find those commonalities will support growth of professional relationships and development of social capital within the system. Ultimately, that social capital will help to catalyze collaboration between the groups, strengthening of the systems, and an enhanced enabling environment for handwashing.

Advocacy

Advocacy is critical at multiple junctures of the systems change process. From rallying behind an initial vision to scaling up handwashing efforts, advocacy is needed to motivate and inspire actors in the system to achieve improvements in policy, investment, planning, and monitoring to support overall system change. For effective advocacy, it is important to develop targeted messages based upon specific "asks" and audiences. For example, an "ask" could target a country's government officials to develop finance strategies and budgets that allocate resources for design of a nationwide handwashing behavior change program and support for all of the actors of the system to implement the program.

There are several mechanisms for handwashing advocacy. One of the most effective ways to advocate for an issue is to speak directly with decision makers, either through various communication channels or in person. National-level decision makers, such as those within ministries of planning, finance, WASH, public health, and education are important audiences, as are their regional-, provincial- or district-level counterparts. Direct outreach to these decision makers can help drive investments toward handwashing and mobilize participation from other actors,

including communities, the private sector, civil society organizations, and other stakeholders, to develop and support sustainable handwashing solutions.

Media, whether traditional or social media, can also be a powerful tool to convey advocacy messages. Media can help others learn about the need for hand hygiene, and can put the focus and pressure on decision makers to take action in adequately supporting handwashing programs. Likewise, community events can draw attention to handwashing as an important issue that impacts the community. The use of commitments has also been used to improve the strengthening of handwashing systems. Advocacy days, such as Global Handwashing Day, provide an opportunity to draw attention to hand hygiene on a worldwide scale. It is important that these days are used to drive action. For example, a global advocacy day could be used as a platform for governments and other system leaders to pledge their commitments to prioritize handwashing through their respective agencies or organizations.

CASE STUDY

Global Handwashing Day Is More Than Just a Day

PHOTO CREDIT: WSSCC

Global Handwashing Day provides a platform for advocates to raise awareness of the importance of handwashing on a global scale. However, awareness alone will not achieve success. Appropriate financing and government commitment are required to drive progress in handwashing.

Since the inception of Global Handwashing Day in 2008, an increasing number of national and local governments have committed resources, established policies, and implemented programs to support handwashing with soap. In previous years, government commitments have included:

- **Commitments to integrate handwashing into school curricula and teacher training programs**
- **Policies to ensure handwashing stations are built alongside new latrines**
- **Budget lines dedicated to handwashing behavior change**

Global Handwashing Day has served as a catalyst for high-profile events where government leaders have announced new handwashing-related initiatives or policies. In the Philippines, for example, local and national government departments used Global Handwashing Day 2010 to collectively pledge to promote handwashing with soap as part of a healthy school environment for all children nationwide. The departments of health, education, social welfare, and development signed an intra-governmental agreement and worked to enforce handwashing practices within schools. In another example, as part of Nigeria's "Clean Nigeria Campaign", Global Handwashing Day 2019 served as an important reminder of the need to incorporate handwashing targets.

DEFINITION

Mapping the System

A contextual analysis designed to identify critical gaps and significant opportunities in a system

Mapping the System

One of the first steps in visualizing a system is thinking broadly about the core issues —and the related social, economic, governmental and environmental forces. Doing this contextual analysis is called mapping the system. Relationships among key stakeholders within the system are outlined, noting where and how they are working, what issues concern them, and with whom they are already collaborating. This network information should be shared to optimize the function of the system, and for monitoring changes in the system.

A crucial mapping task is to identify critical gaps and significant opportunities in a system, based upon research and consultations with the networks of key leaders and actors. Identifying a system's strengths and weaknesses in this way will help stakeholders focus on elements of the system that they can build on, and gaps they need to address.

To consider different elements of a system for mapping, the USAID local systems approach focuses on the Five Rs – resources, roles, relationships, rules, and results *(USAID, 2014)*:

- **Resources** include budget allocations or specific handwashing infrastructure.
- **Roles** involve the number of actors that take on defined roles to address handwashing.
- **Relationships** focuses further on the interactions among the actors in a local system.
- **Rules** are important and set the governance.
- **Results** are the outputs and outcomes.

In mapping the system for handwashing, some of the questions that should be answered include:

- What is the status of handwashing among different populations?
- What groups support handwashing? How do different actors support handwashing?
- What are current alliances and partnerships?
- What political, legal, and regulatory forces affect handwashing scale-up efforts?
- What are the current handwashing activities?
- What are the sources of funding and levels of funding for those activities?
- Is there support for handwashing integration in other programs and initiatives?
- Has adequate formative research been completed to identify the behavioral determinants for handwashing with different groups in the target areas?
- What is the experience and expertise of different actors? What are the gaps in capabilities that inhibit the system support for handwashing scale-up and sustainability?
- Where are the greatest needs and opportunities for scaling up handwashing?

One of the analytic tools that can be used for systems mapping is social network analysis (SNA), a tool for studying social systems that focuses on the complex relationships between individuals and organizations *(Harper, 2020)*. SNA can increase understanding of the structural characteristics of a network, such as who the central actors in a network are, how tightly interconnected or fragmented the network is, and what subgroups or clusters exist. Strengths and weaknesses of important aspects of the system can be determined, including topics such as communication within the system, flow of resources, power structures, and the overall functioning of the network.

Another tool that can be used to map the system is power analysis. It is used to identify the key decision-makers and others who have power over specific issues, as well as people and organizations who can influence those people *(Tiberghien, 2012)*. Power analysis:

- Helps to reveal power relations, map stakeholder relationships, and identify channels of influence, as well as risks of conflict.
- Reveals hidden mechanisms of power that affect participation by marginalized groups
- Identifies targets, allies, opponents, and constituents for the system strengthening goals

Mapping the system is not a one-time activity for system strengthening. After initial system mapping has been completed, the map is filled in more intricacy through planning and system strengthening activities, as relationships and understanding grow within the network.

Foster Collective Impact

Following initial mapping of the system of relationships, a major event can be held to begin the process of catalyzing collaboration and building partnerships to strengthen the system. In the SCALE+ approach, this event is called *Whole-System-in-the-Room* and brings together 50 to 100 participants from every relevant sector and viewpoint of the system *(FHI 360, 2020; Weisbord & Janoff, 2010)*. Its first task is a large-scale, participatory mapping of the specific issue or problem, which adds significant depth to the preliminary mapping work.

During a *Whole-System-in-the-Room* event, stakeholders work together to identify the most pressing issues faced in improving handwashing, their common goals, and the major barriers to achieving those goals. Barriers may lie in governance, structure, economic, and social factors. Governance barriers can include lack of a policy or strategy to guide handwashing programming throughout health, education, and other sectors. An example of a barrier in structure could be an absence of personnel or equipment needed to ensure access to handwashing facilities in an institutional setting. An example of a barrier involving both economic and social factors would be a lack of options among low-income communities for handwashing facilities.

The stakeholders develop goals for how to affect selected critical gaps and significant opportunities in order to catalyze system-wide change, ensuring that interventions are designed according to the system's context and demands. Applying a systems lens means priorities may emerge in different parts of a system. Depending on the barriers identified, technical interventions may include policy reform, social marketing campaigns, technical training, organizational capacity building, or advocacy.

DEFINITION

Whole-System-in-the-Room

A participatory event to stimulate shared understanding and catalyze formation of coalitions for collective action

PHOTO CREDIT: CAWST

During the event, participants agree on collaborative actions to reach the consensus goals. Commitments made by stakeholders to act and contribute resources to achieve those goals become the basis for a preliminary system strengthening action plan. Task forces are assigned to oversee and implement different elements of the overall action plan. Establishing common goals allows stakeholders to invest more fully in actions that complement the actions of other participants.

National and Subnational Level Handwashing Partnerships

With the leadership, collaboration, social capital, and agreed collective impact created through the system strengthening process, it could be desirable for partners to form a handwashing partnership to take the coordination relationship to a higher level than the collaboration established thus far. Formation of a national or subnational level handwashing partnership may be one of the goals of the system strengthening process from the beginning, or it may be identified as desirable through the collective impact process. The creation of subnational handwashing partnerships can also help to localize the fight for handwashing and enable a scale response across the country.

Even if holistic handwashing system strengthening is not being completed in a country, it can be valuable to form a handwashing partnership as a coordination mechanism to support handwashing. The partnership could include various private sector, government, and civil society actors. One example of this kind of coordinating body is the Kenyan National Business Compact, which brings together all manufacturers of soap for collective impact in Kenya *(Global Handwashing Partnership, 2020)*. National and subnational level handwashing partnerships can be formed quickly, especially during times of an outbreak such as COVID-19, and can ensure a specific focus on handwashing among a group of private sector, government, and other partners. An example of this type of partnership includes the hygiene working group within a National WASH Cluster. Steps for rapid formation of a handwashing partnership mirror the normal steps of partnership formation but are accelerated to reflect the urgency of the crisis. The first step is to establish the need and role for a handwashing partnership, including synergies of pooling resources to address opportunities and gaps to accomplish immediate, shared goals *(Global Handwashing Partnership, 2020)*. Steps for forming a handwashing partnership include identifying stakeholders, such as

private sector partners with expertise and resources in marketing and supply chain, establishing focal person(s) for leadership, planning activities that are appropriate for the context of the outbreak with limited time and difficulties in completing formative research, and reflecting on lessons learned through collaborative action to optimize the next activities. To sustain the partnership in the long term, there must be added value for each individual organization. Good communication can ensure more aligned efforts, limited overlap in activities, and facilitate each partner in understanding the added value of the partnership.

Accountability

Systems strengthening emphasizes mutual accountability among stakeholders—to each other and to their publicly shared commitments. Accountability can take several forms, from direct feedback to formal political processes. Sanitation and Water for All has developed a mutual accountability mechanism and the commitments provide examples of commitments of national governments and civil society to support handwashing.

CASE STUDY

SWA's Mutual Accountability Mechanism

The Sanitation and Water for All (SWA) Mutual Accountability Mechanism is a process for governments and other stakeholders to make commitments on specific actions they will take to achieve the targets set by the SDGs and then to report back on their actions to achieve their commitments *(Sanitation and Water for All, 2019)*. Representative commitments include:

Country	Group Making Commitment	Commitment	Target Year
Bhutan	Government	Develop an inclusive national road map for sanitation and hygiene	2020
Gambia	Government	To increase the proportion of households with a place for handwashing with soap and water from 30.3% to 60% (urban) and from 26% to 50% (rural) by December 2021	2021
Lesotho	Government	End population practicing open defecation and improve hygiene practices in schools, health facilities, and selected rural communities	2023
Rwanda	Government	Technically and financially support the development and implementation of the Ministry of Health-led National Handwashing Sub-strategy in FY2019-20	2020
Tanzania	Civil Society	Identify approaches that will improve sanitation and hygiene in poorly served and remote areas by 2020	2020

Under a system strengthening plan, some of the central goals may be stronger stakeholder relationships, better communication among stakeholders, and improved cohesion of the system. Therefore, monitoring for accountability in a systems approach may have considerably different indicators, compared to a program that is not focused on systems. Accountability mechanisms provide information on whether the system is working well or if adjustments are needed to adapt to changes in the environment *(USAID, 2014; IRC WASH, n.d.; Sanitation and Water for All, 2019)*.

Strong accountability relationships are crucial to a durable and adaptive local system. These relationships provide the feedback channels that keep the system dynamic and sustainable. Transparency of data and public access to information are important elements to support accountability. Participatory forms of monitoring and evaluation can ensure that products and interventions are locally useful, empower all systems stakeholders, and encourage collaborative problem solving. Ensuring flexible feedback mechanisms gives the system dynamism. Such adaptability to respond to changes based on new learning deepens overall accountability for successful improvements *(USAID, 2014)*.

Hand Hygiene for All as a Whole Systems Approach

WHO, UNICEF, and a set of core partners, including the Global Handwashing Partnership, launched the Hand Hygiene for All Global Initiative in 2020, with the goal of universal hand hygiene and a vision to achieve it — which ultimately means a new way of working and living, where hand hygiene is embedded not only in health systems to prevent infection, but also in everyday lives. To truly reimagine a world where no one is left without access to hand hygiene, all of society must play a role in collaboration with international partners, national governments, public and private sectors, and civil society. Working across sectors is essential and requires the kind of systems approach described in this chapter. The initiative will work towards building political leadership, a strong enabling environment, and robust supply and demand for hand hygiene in every country.

The initiative is designed around three stages:

1 **Responding** to the COVID-19 pandemic

2 **Rebuilding** infrastructure and services

3 **Reimagining** hand hygiene in society

Table 8 provides specific actions outlined by the Hand Hygiene for All Global Initiative through system building blocks (described in the **Building Blocks for Handwashing** section).

"Systems strengthening emphasizes mutual accountability among stakeholders—to each other and to their publicly shared commitments."

Table 8: Hand Hygiene for All Actions by Building Block

Respond (short-term)	Rebuild (medium-term)	Reimagine (long-term)
Coordination and institutional arrangements		
■ Convene a national coordination group with representation from different government authorities (health, WASH, education), the private sector, and civil society	■ Give schools and businesses the appropriate guidance and support to implement improved hand hygiene measures for re-opening ■ Develop mechanisms for working with the private sector, identifying new win-win partnerships to fill gaps and build on opportunities	■ Implement legal and regulatory frameworks for hand hygiene in public spaces, including standard operating procedures in schools and hospitals ■ Implement WHO hand hygiene multimodal improvement strategies across all levels of the health system
Policies and strategies		
■ Review policies and standards/ requirements about hand hygiene in health care facilities, schools, and other settings	■ Issue inter-ministerial/ inter-agency policy roadmaps with steps for accelerating the scale-up of hand hygiene ■ Map hand hygiene policies across agencies, with suggestions for alignment and operationalization at local and facility levels	■ Convene all stakeholders to review existing gaps and agree on strategies for addressing them ■ Set timebound targets to benchmark advances in scaling up hand hygiene ■ Develop and approve new hand hygiene provision and education policies in different settings to address bottlenecks ■ Advocate for a hand hygiene curriculum for all schools
Financing		
■ Set and budget for targets in terms of coverage of hand hygiene facilities in public spaces and health care facilities ■ Activate contingency funds and supplementary budgets ■ Direct emergency funding to reach the most vulnerable people and those with disabilities	■ Support schools with adequate planning and financing of hand hygiene measures as they re-open ■ Reprogram activities and budgets ■ Mobilize resources to meet immediate needs with a longer-term vision	■ Ensure that targets are costed and that financed plans for hand hygiene in different settings are featured in national plans, loans, and grants ■ Increase budget allocations for the implementation and monitoring of hand hygiene programs ■ Include a budget for hand hygiene in preparedness plans for public health emergencies

Respond (short-term)	Rebuild (medium-term)	Reimagine (long-term)
Planning, monitoring, and review		
■ Set up systems for rapid data collection about the use of hand hygiene stations in schools, health care facilities, and public settings ■ Identify vulnerable populations who are most at risk and least likely to be able to practice hand hygiene measures	■ Fill gaps in data on hand hygiene in health care facilities, schools, and other public settings ■ Identify and prioritize vulnerable populations who still lack hand hygiene at home ■ Prioritize schools that lack hand hygiene facilities for upgrading prior to reopening ■ Build on the momentum to get hand hygiene included in upcoming surveys of households, schools, and health care facilities	■ Conduct comprehensive baseline and follow-up assessments of hand hygiene facilities and behaviors across multiple settings ■ Mainstream hand hygiene data collection into routine administrative data collection systems (e.g., management information systems), as well as surveys or spot checks (e.g., household surveys, regulatory checks) ■ Ensure that hand hygiene features in regular sector reviews
Capacity development		
■ Rapidly train community health workers, hygiene promoters, health care staff, and other essential workers in hand hygiene promotion and best practices ■ Facilitate knowledge exchange of lessons learned and examples of best practices at international, national, and subnational levels ■ Support local suppliers and manufacturers to scale up production and distribution of hand hygiene facilities and supplies	■ Map existing capacities and identify gaps and opportunities for development, including strengthening the enabling environment, promoting hand hygiene practices, and shaping the market for handwashing supplies	■ Invest in leadership development of key staff responsible for hand hygiene activities at institutional and community levels ■ Incentivize investments in handwashing by institutions and individuals, including recognition of contributions ■ Develop or update context-specific programming guidance and tools for rolling out hand hygiene programs at scale ■ Invest in the professionalization of the hand hygiene workforce ■ Integrate hand hygiene into national training programs and curricula

Chapter Takeaways and Resources

Achieving and sustaining handwashing outcomes depends upon the support and contributions of the many actors —from government, business, funders, NGOs, civil society, academia, and communities —that comprise systems at the national, regional, and community levels. Key takeaways for addressing handwashing at the systems level include:

- **Adopt systems thinking**. A holistic approach is needed to address handwashing with soap in a sustainable way. Understanding the connections among multiple actors and their interrelated motivations and challenges can stimulate collective action toward a common goal. Building bridges across networks and increasing bonds within organizations can lead to better development outcomes.
- **Map the system.** A contextual analysis of the system to support handwashing can help stakeholders identify any challenges or significant opportunities, as well as key relationships. When mapping the system, stakeholders should consider focusing attention on the Five Rs – resources, roles, relationships, rules, and results.
- **Conditions and systems are dynamic.** Stakeholders should consider changes from the perspectives of the many actors in the system, building toward universal recognition of the need to promote and practice handwashing. Reflection and learning allow stakeholders to refine the systems approach and to consider changes in conditions for handwashing behavior or changes in the system itself.
- **Develop methods for accountability.** Accountability mechanisms should facilitate critical reflection on whether the system is working well or if adjustments are needed.

Additional Resources for Addressing Handwashing at a Systems Level

- **Global Handwashing Partnership.** "How to" Brief: National and Subnational Handwashing Partnerships. This guidance brief discusses the importance of national or subnational partnerships, outlines steps to move forward with a handwashing partnership, and provides examples from successful national partnerships.
- **Agenda for Change.** Agenda for Change Systems Library. This library provides different resources for WASH systems strengthening including principles, concepts, examples, and experiences.
- **International Rescue Committee.** Social Network Analysis Handbook. This handbook provides a step-by-step guide to social network analysis.
- **IRC WASH.** Understanding the WASH system and Its Building Blocks. This working paper explains different systems approaches for WASH, defines the building blocks of the WASH system, identifies critical links to other building blocks, and describes implementation at different administrative levels.
- **IRC WASH.** WASH Systems Academy. The IRC WASH Systems Academy is a series of free online courses aimed at assisting WASH sector professionals in applying systems strengthening approaches to their work.
- **LSP Consortium.** Local Systems Practice User's Guide. This guide provides insights on several methodologies that can assist local missions and organizations in applying a systems lens to drive development.
- **Sanitation and Water for All.** SWA Building Blocks and Collaborative Behaviors. Building blocks and collaborative behaviors provide a common framework for addressing handwashing at a systems level, describe the key elements, and outline ways partners can work together to strengthen a WASH system.
- **Sustainable Services Initiative.** Strengthening WASH Systems: Tools for Practitioners. This toolbox provides information on systems strengthening for country or field-based practitioners.
- **USAID.** USAID Local Systems Framework. This framework defines the principles of engaging local systems, provides clear and practical steps for progress, and serves as a basis for deeper collaboration with all partners to support sustainability though local systems.
- **WHO & UNICEF.** Hand Hygiene for All Global Initiative. This document highlights the WHO and UNICEF Hand Hygiene for All Global Initiative, which calls for a systems approach to building a culture of hand hygiene.
- **World Bank Water and Sanitation Program.** Guidelines for Assessing the Enabling Environment Conditions for Large Scale, Effective and Sustainable Handwashing with Soap Projects. This document guides programmatic staff on how to carry out a programmatic assessment of the enabling environment for handwashing, and shares lessons learned about relevant approaches and conceptual frameworks.

Conclusion and References

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Conclusion

PHOTO CREDIT: CAWST

This handbook outlines approaches to promoting handwashing with soap through context-adapted behavior change and systems-level programming. For handwashing to be widely accepted and sustained, initiatives should consider both the physical (hardware) and psychosocial (software) aspects of handwashing behavior change. Government agencies, the private sector, nongovernmental organizations, and academia all have important roles to play in accomplishing universal, appropriate handwashing practices.

Key takeaways

Practice handwashing at all key times and places. The habit of handwashing needs to be well established in the home, but life extends far beyond the home and so should good hand hygiene. Appropriate handwashing is also needed in schools, health care facilities, workplaces, marketplaces, and emergency contexts.

Use best practices for behavior change. Education alone is not enough to catalyze handwashing practice. Handwashing behavior change programs must leverage locally relevant behavioral determinants, enabling factors and barriers of handwashing behavior for the specific target audience. Formative research is critical to understand which drivers and barriers are most important in a given context. Behavioral determinants, such as nurture or disgust, are examples of drivers that can have a powerful influence on handwashing habits. Targeting key behavioral determinants in the program design is critical to change behavior. Going deeper into habit formation, the use of nudges, such as mirrors for handwashing stations, can encourage handwashing behavior on a subconscious level.

Mainstream handwashing behavior change. Handwashing with soap has important cross-cutting benefits, so it is important to integrate handwashing promotion activities into interventions beyond WASH, including nutrition, early child development, health, and inclusion programs. Prioritizing handwashing within these activities will ensure a greater impact.

Consider the system. Handwashing behavior is influenced by influences beyond an individual. For example, policies and leadership can be powerful drivers of handwashing uptake, with a supportive enabling environment motivating handwashing at a systems level. For handwashing practice to be scaled up and maintained, every actor and every element of the system must function effectively. Systems building blocks include: coordination and institutional arrangements; policies and strategies; financing; planning, monitoring, and review; and capacity development. By assessing these building

blocks and the linkages between them, practitioners can identify specific gaps to target in their interventions for larger impact.

Evaluate results and share findings. Evaluating programs and sharing lessons learned is critical to improve handwashing programs at scale. Additional evidence on the importance of handwashing and related issues will help improve the integration of handwashing into other programs. It is critical to share examples and learnings from evidence-based programs and strategies that showcase the synergies between handwashing and nutrition, infectious diseases, and other related areas. In addition, further research on the cost-effectiveness of approaches to changing handwashing behavior will help optimize implementation and ensure sustainability.

Handwashing with soap remains one of the key challenges of the SDG agenda. With greater recognition of its benefits, more support for an integrated systems approach, and a more comprehensive approach to behavior change, handwashing with soap can be universally recognized, promoted, and practiced.

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