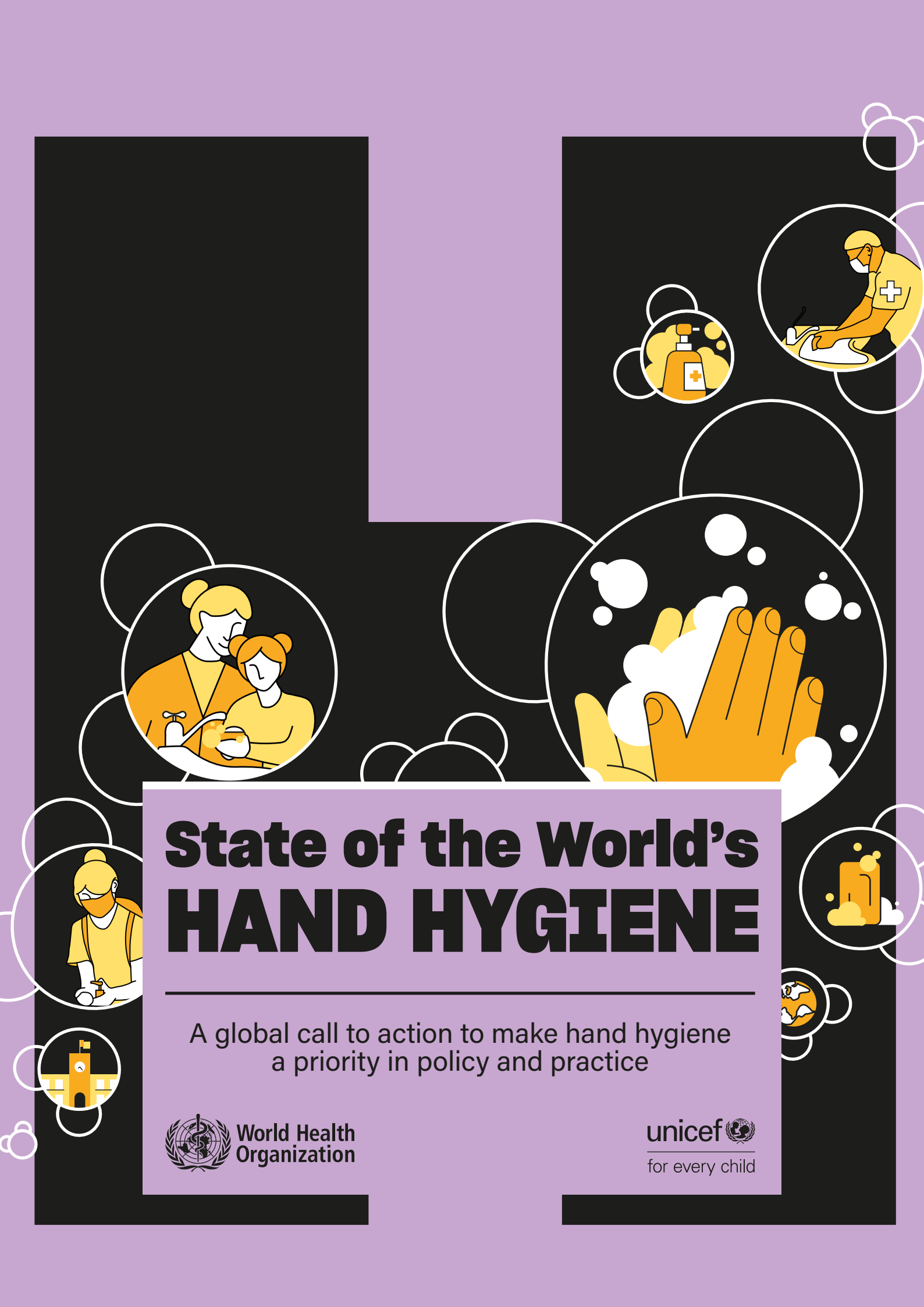




State of the World's HAND HYGIENE

A global call to action to make hand hygiene
a priority in policy and practice



World Health
Organization

unicef 

for every child

Published by UNICEF and WHO
Programme Division/WASH
3 United Nations Plaza
New York, NY 10017 USA
www.unicef.org/wash

© **United Nations Children's Fund (UNICEF) and World Health Organization (WHO), 2021**

Suggested citation: United Nations Children's Fund and World Health Organization, *State of the World's Hand Hygiene: A global call to action to make hand hygiene a priority in policy and practice*, UNICEF, New York, 2021.

UNICEF ISBN: 978-92-806-5290-1

Permission is required to reproduce any part of this publication. For more information on usage rights, please contact nyhqdoc.permit@unicef.org

The designations employed in this publication and the presentation of the material do not imply on the part of the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) the expression of any opinion whatsoever concerning the legal status of any country or territory, or of its authorities or the delimitations of its frontiers. Dotted and dashed lines on maps may represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO and UNICEF in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO and UNICEF to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO and UNICEF be liable for damages arising from its use.

The statements in this publication are the views of the author(s) and do not necessarily reflect the policies or the views of UNICEF or WHO.

Edited by Jeff Sinden. Publication design by Blossom.

Acknowledgements

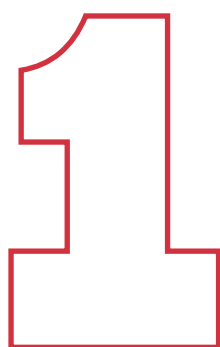
This report is the result of collaboration between a large number of contributors, reviewers and editors. The development of the report was led by Ann Thomas (Senior Advisor, WASH, UNICEF), under the overall direction and guidance of Kelly Ann Naylor (Director for WASH, UNICEF) and Bruce Gordon (Coordinator of Water, Sanitation, Hygiene and Health, World Health Organization). Clarissa Brocklehurst acted as Managing Editor.

This document could not have been produced without the valuable contributions of Nathaniel Paynter, Tom Slaymaker, Christian Snoad, Job Ominyi, Mitsunori Odagiri and Guy Hutton at UNICEF, and Joanna Esteves Mills, Rick Johnson, Betsy Engebretson, Maggie Montgomery, Benedetta Allegranzi, Claire Kilpatrick and Kerstin Schotte at WHO.

WHO and UNICEF are grateful to the many others who assisted with contributions, including Om Prasad, Helen Hamilton and Julie Truelove, WaterAid; Julia Rosenbaum, FHI360; Claire Chase, World Bank; Cheryl Hicks, WASH4Work; Jason Cardosi, LIXIL; Jeff Albert, Aquaya; Andrea Beatriz Lee-Llacer and Beverly Ho, Government of the Philippines; Ben Mandell and Jessica Jacobson, Water.org; Belinda Makhafola, Environmental Health Services, Government of South Africa; Ian Ross and Daniel Korbel, London School of Hygiene and Tropical Medicine, and Peter van Maanen, consultant.

The authors would like to pay tribute to Val Curtis, Director of the Environmental Health Group at the London School of Hygiene and Tropical Medicine, who tragically died in 2020. Val was a champion of hand hygiene, and her work did more than anyone else's to raise the profile of hygiene and behaviour change in global health and political agendas.

Contents



WHY IS THIS REPORT NECESSARY?

13

1.1 Defining the challenge 14

1.2 A timeline of hand hygiene history 16

1.3 Things you need to know before reading this report 18

Acknowledgements 3

Foreword 8

Acronyms and abbreviations 9

Executive summary 10

Endnotes 83

WHY INVEST IN HAND HYGIENE?

21

2.1 Hand hygiene protects health 22

2.2 Hand hygiene has positive economic impacts 23

2.3 Hand hygiene is good for society as a whole 25

WHAT IS THE CURRENT STATUS OF PROGRESS IN GLOBAL HAND HYGIENE?

27

3.1 Monitoring hand hygiene 28

3.2 Hand hygiene in households 29

3.3 Hand hygiene in schools 35

3.4 Hand hygiene in health care facilities 38

3.5 Hand hygiene in other settings 41



WHAT IS THE STATUS OF POLICY AND FINANCE FOR HAND HYGIENE?

45

4.1

Status of national hygiene policies and plans

46

4.2

National targets for hygiene

48

4.3

The cost of achieving universal hand hygiene

49

4.4

Current investment levels and sources of funding

53

IMAGINING A BETTER FUTURE: A DRAMATIC ACCELERATION IN PROGRESS REQUIRES WORK ON MANY FRONTS

57

5.1

The COVID-19 pandemic is an inflection point

58

5.2

Countries are rising to the challenge

60

GOVERNMENTS CAN ACCELERATE HAND HYGIENE PROGRESS WITH PROVEN, EFFECTIVE APPROACHES

65

6.1

Good governance begins with leadership, effective coordination and regulation

66

6.2

Smart public finance unlocks effective household and private investment

69

6.3

Capacity at all levels drives progress and sustains services

71

6.4

Reliable data support better decision-making and stronger accountability

75

6.5

Innovation leads to better approaches and meets emerging challenges

78

6.6

Looking ahead: A pathway to 2030

81

Tables, figures and boxes

TABLES

TABLE 1: SDG service ladder for hygiene	19
TABLE 2: Number and percentage of countries with national hygiene plans that have been costed and supported by sufficient financial resources	47
TABLE 3: National hygiene coverage targets and alignment with SDG 6	48

FIGURES

FIGURE 1: A timeline of progress in hand hygiene	17
FIGURE 2: Progress in coverage of hygiene services between 2015 and 2020	30
FIGURE 3: Population with no handwashing facilities at home, 2020 (%)	30
FIGURE 4: Population with basic hygiene facilities in Haiti, disaggregated by SDG region, country, urban/rural, sub-national region and wealth quintiles, (%)	32
FIGURE 5: Progress towards universal basic hygiene among countries with more than 99% coverage in 2020, by national income category, 2015-2020	32
FIGURE 6: Top countries in expanding hand hygiene coverage, 2015-2020	33
FIGURE 7: Basic hygiene vs improved and accessible water on premises, (%)	34
FIGURE 8: Progress in basic hygiene services (2015-2020), and acceleration needed to reach universal coverage by 2030	35
FIGURE 9: Hygiene in schools (% of schools and number of children)	35
FIGURE 10: Trends in global coverage of hygiene in schools, 2015-2019, (% of schools)	36
FIGURE 11: Regional coverage of hygiene in schools, 2015-2019 (%)	36
FIGURE 12: Handwashing before eating and after using the toilet in schools in Latin America and the Caribbean, (%)	37
FIGURE 13: Use of soap for handwashing by girls and boys, (%)	37
FIGURE 14: Hand hygiene services in health care facilities, by country, 2019, (%)	41
FIGURE 15: Proportion of health care facilities with hand hygiene at points of care, 2019, (%)	40
FIGURE 16: Progress in basic hand hygiene services in fragile and conflict-affected countries, (%)	42
FIGURE 17: Inequalities in basic hygiene services: Globally, in fragile contexts and Niger	42
FIGURE 18: Households in refugee camps with access to soap, (%)	43

FIGURE 19: Estimated annual cost of providing hand hygiene in all households in 46 least-developed countries, (US\$)	50
FIGURE 20: Sufficiency of financial resources allocated to hygiene to meet national targets	54
FIGURE 21: Government spending on hygiene compared to drinking water and sanitation, 14 countries, (%)	55

BOXES

BOX 1: Defining hygiene and hand hygiene	14
BOX 2: Defining handwashing facilities	18
BOX 3: Soap and water, or alcohol-based hand rub?	19
BOX 4: Handwashing is a highly cost-effective intervention in domestic settings	24
BOX 5: Points of care	39
BOX 6: Ensuring the availability of affordable soap and alcohol-based hand rubs	52
BOX 7: Government investment in behaviour change: The example of tobacco use	53
BOX 8: Tracking hygiene expenditure through WASH accounts in Mali	55
BOX 9: Accelerating progress on hand hygiene through local government in the Philippines	62
BOX 10: Hygiene promotion at scale in Zambia	63
BOX 11: Focusing on hand hygiene in public places in Indonesia	63
BOX 12: South Africa: Developing and using a national hand hygiene policy	67
BOX 13: Taking an all-of-government approach to hygiene in Nigeria	67
BOX 14: Hand hygiene as part of Clean Green Pakistan	68
BOX 15: Integrating hygiene and immunization programming in Nepal	68
BOX 16: Mobilizing COVID-19 funding for hand hygiene in the Lao People's Democratic Republic	70
BOX 17: The African Sanitation Policy Guidelines provide support to governments to include hand hygiene in sanitation policy	72
BOX 18: In Timor-Leste, a twinning partnership with Macao focused on improvements in health care facilities	73
BOX 19: The International Labour Organization provides guidance to workplaces to ensure hand hygiene	74
BOX 20: Monitoring hand hygiene behaviour in public places in Indonesia using mobile phones	76
BOX 21: Use of SMS surveys to gather information on handwashing and soap access in Africa	77
BOX 22: Leveraging an existing partnership to innovate for handwashing: The SATO Tap	79
BOX 23: A social enterprise responds to the need for innovative portable handwashing facilities: The HappyTap	80
BOX 24: Inclusive design makes handwashing accessible for people living with disabilities in the United Republic of Tanzania and Zambia	80

Foreword

When COVID-19 emerged nearly two years ago, the world was without vaccines or medicines for this novel virus. One of the most critical tools in our arsenal for preventing infection was also one of our oldest: hand hygiene. But it was one that nearly a third of the world could not use.

The benefits of hand hygiene in preventing the transmission of infectious diseases have been known since 1850. For example, proper hand hygiene has been proven to reduce deaths from respiratory and diarrheal diseases in children under five by 21 per cent and 30 per cent respectively.

Yet in 2021, an estimated 2.3 billion people globally cannot wash their hands with soap and water at home and one-third of the world's health facilities lack hand hygiene resources at the point of care. Meanwhile, nearly half of schools worldwide do not have basic hygiene services, affecting 817 million children.

Over the past five years, half a billion people have gained access to basic hand hygiene facilities – a rate of 300,000 per day. This is progress, but it is far too slow. At the current rate, almost two billion people will still lack access to basic hand hygiene facilities in 2030, negatively impacting other development priorities, including education, health, nutrition, and economic growth.

COVID-19 created a unique moment for hand hygiene, with unprecedented attention, resources, and political will. However, we know from previous emergencies that such attention can be fleeting. In 2020, UNICEF, WHO and other partners launched the *Hand Hygiene for All* initiative, with the aim of channeling momentum around hand hygiene into long-term sustainable change.

The State of the World's Hand Hygiene is the flagship report of the *Hand Hygiene for All* initiative, and is a companion piece to last year's [State of the World's Sanitation](#) report. The report's message is clear: we must quadruple the current rate of progress to achieve the Sustainable Development Goal target on hand hygiene.

We call on all governments to make the cost-effective investments in hand hygiene that will save many lives.

Now is the time for governments, donors, and multilateral agencies to step up and support this most fundamental of public health interventions. Hand hygiene is essential to primary health care, universal health coverage, and disease control. With the right leadership on hand hygiene, we can make the world a healthier place for all.



MS. HENRIETTA H. FORE
Executive Director
UNICEF



DR. TEDROS ADHANOM GHEBREYESUS
Director-General
World Health Organization

Acronyms and abbreviations

ABHR	alcohol-based hand rub
AMCOW	African Ministers' Council on Water
CDC	Centres for Disease Control and Prevention
CSO	civil society organizations
DALY	disability-adjusted life year
DHS	Demographic and Health Survey
EMIS	education management information system
ESA	external support agency
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
HBCC	Hand Hygiene Behaviour Change Coalition
HH4A	Hand Hygiene for All
HHMA	Hand Hygiene Market Accelerator
ILO	International Labour Organization
IPC	infection prevention and control
JMP	WHO-UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene
OECD	Organization for Economic Co-operation and Development
MICS	Multiple Indicator Cluster Survey
MOOC	massive open online course
NGO	non-governmental organization
SDG	Sustainable Development Goal
UNICEF	United Nations Children's Fund
UNHCR	United Nations High Commission for Refugees
USAID	United States Agency for International Development
WASH	water, sanitation and hygiene
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization

Executive Summary

Sustainable Development Goal (SDG) 6 calls for the global community to achieve access to hygiene for all by 2030. Hand hygiene is one of the most important elements of hygiene. However, both access to the facilities to practise hand hygiene and support for the behaviours required are missing in many settings.

It is estimated that three out of ten people, 2.3 billion globally, lack a facility with water and soap available to wash their hands at home, including 670 million who have no handwashing facility at all. Facilities are also missing in many health care facilities, schools and public places. For instance, 7 per cent of health care facilities in sub-Saharan Africa, and 2 per cent globally, have no hand hygiene services at all, and 462 million children attend schools with no hygiene facilities.

The simple act of cleaning hands can save lives and reduce illness by helping prevent the spread of infectious diseases. These diseases can be caused by pathogens (germs) transmitted through the air or via surfaces, food or human faeces. Because people frequently touch their face, food and surfaces, hands play a significant role in spreading disease. It is estimated that half a million people die each year from diarrhoea or acute respiratory infections that could have been prevented with good hand hygiene. As well as preventing a multitude of diseases, hand hygiene can help avoid significant financial costs resulting from sickness and death.

During the COVID-19 pandemic, hand hygiene received unprecedented attention and became a central pillar in national COVID prevention strategies. This has created a unique opportunity to position hand hygiene as an important long-term public policy issue. The evidence shows that hand hygiene is a highly cost-effective investment, providing outsized health benefits for relatively little cost; truly a 'no-regrets' investment.

Despite efforts to promote hand hygiene, often supported by the international community and coinciding with epidemics or emergencies, the rates of access to hand hygiene facilities remain stubbornly low. If current rates of progress continue, by the end of the SDG era in 2030, 1.9 billion people will still lack facilities to wash their hands at home.

Governments should commit to hand hygiene not as a temporary public health intervention in times of crisis, but as a vital everyday behaviour that contributes to health

and economic resilience. The global community finds itself at a unique moment in time – one of both urgency and opportunity. **The time to accelerate progress on hand hygiene is now** – before the next health crisis is upon us.

Both citizens and governments have a role to play. Governments should show leadership and make hand hygiene a public policy issue, backed with relevant regulation and enforcement. Water must be made easily accessible to allow hand hygiene everywhere, and hand hygiene facilities should be available and used in every health care facility and school. Governments should make strategic investments in promotion and capacity building. Analysis shows that government expenditure in hand hygiene promotion will heavily leverage investments by households.

Individuals should adopt and maintain hand hygiene behaviours, and expect others to do the same. Households can invest in handwashing facilities, which can be as simple as a jug and a bowl, and purchase soap. The private sector has a role to play, working with governments, to make hand hygiene facilities, water and soap widely available and affordable by all.

As this report shows, investment in five key 'accelerators' – governance, financing, capacity development, data and information, and innovation – identified under the UN-Water SDG 6 Global Acceleration Framework – can be a pathway towards achieving hand hygiene for all.

Good governance begins with leadership, effective coordination and regulation: It is critical that governments establish clear policy relating to both service availability that facilitates handwashing, including readily available water, and the behaviours required to ensure hand hygiene is common practice in all relevant settings. Hand hygiene should be championed – by a head of state, minister or another senior political figure ready to assume the challenge of driving progress. Local leadership is equally important; states, districts and villages should also be committed. All levels of government need to be clear that hand hygiene is a crucial public policy issue, and progress requires targets, strategies, roadmaps and budgets.

Smart public finance unlocks effective household and private investment: Governments should seek ways to ensure public spending has the maximum impact possible and stimulates investments from households and the private sector. The cost of hand hygiene can be shared between government and citizens. Strategic government spending on promotion, reinforcement and education both catalyses and optimizes household investment. Governments should invest in hand hygiene in schools and health care facilities, set clear rules for these facilities, and regulate businesses so that hand hygiene is ensured. Governments have an important role to play in investing in water supply systems, so that they provide easily available water in quantities that facilitate handwashing.

Capacity at all levels drives progress and sustains services: Governments should assess current capacity with respect to their hand hygiene policy and strategies, identify gaps and develop capacity-building strategies based on the rigorous application of best practice. There are serious gaps in capacity for the promotion and sustained uptake of hand hygiene, and for many stakeholders this represents uncharted territory. Research into what works in various settings has resulted in critical hand hygiene innovations over the decades. This research is ongoing, and it remains a challenge for governments and others to keep up with the evolving evidence base to ensure effective implementation of innovation. In many

cases, countries need to invest in entirely new skillsets, in terms of how to create an enabling policy environment, promote hand hygiene, incentivize the private sector to engage, and regulate and enforce policy. Capacity needs to be built at all levels, across all settings: both nationally and locally, within governments, the private sector and society as a whole.

Reliable data support better decision-making and stronger accountability:
Governments should address the need for consistent data on hand hygiene in order to inform decision-making and make investments strategic.

While there have been dramatic improvements in the availability of data on hand hygiene in recent years, particularly for households, gaps still remain. There are aspects of hand hygiene in health care facilities that are not comprehensively monitored, and little data exists on the availability and affordability of soap. The lack of data makes tracking progress against national and international targets problematic, and, in turn, makes decisions about policy, programming and investment difficult for governments. Data can be collected through incorporating a standardized handwashing module in household surveys and also through innovative approaches using mobile phones. Examples include crowdsourced data on hand hygiene in public places in Indonesia, and data collected by SMS surveys in Africa on the effects of the COVID-19 pandemic on the availability of soap.

Innovation leads to better approaches and meets emerging challenges:
Governments and supporting agencies should encourage innovation, particularly on the part of the private sector, in order to roll out hand hygiene for all, in all settings. New ideas are needed to overcome challenges, such as lack of water supply, uneven soap availability and the impediment of affordability.



© UNICEF/UNI367259/Fazel

Why is this report necessary?

-
- 1.1 Defining the challenge
 - 1.2 A timeline of hand hygiene history
 - 1.3 Things you need to know before reading this report
-



© UNICEF/UN0414850/Naftalin

1.1

Defining the challenge

The second target under SDG 6 calls for the global community to: “By 2030, achieve access to adequate and equitable sanitation and **hygiene for all** and end open defecation, paying special attention to the needs of women and girls and those in

vulnerable situations”. Hand hygiene is one of the most important elements of hygiene. However, both access to the facilities to practise hand hygiene and support for the behaviours required are missing in many settings.

BOX 1

Defining hygiene and hand hygiene

Hygiene is a broad term and encompasses many activities. It can include hand hygiene (both hand-washing and the use of hand sanitizers such as alcohol-based hand rubs (ABHRs)), menstrual hygiene management, oral hygiene, environmental cleaning in health care facilities and food hygiene. One of the challenges is that there is no clear, agreed-upon, internationally recognized definition of hygiene.

The World Health Organization (WHO) has prepared guidelines on hand hygiene in health care settings, and issues resources that are regularly updated, but there is no internationally recognized definition, or normative guidance on hand hygiene for households, schools and other settings.¹

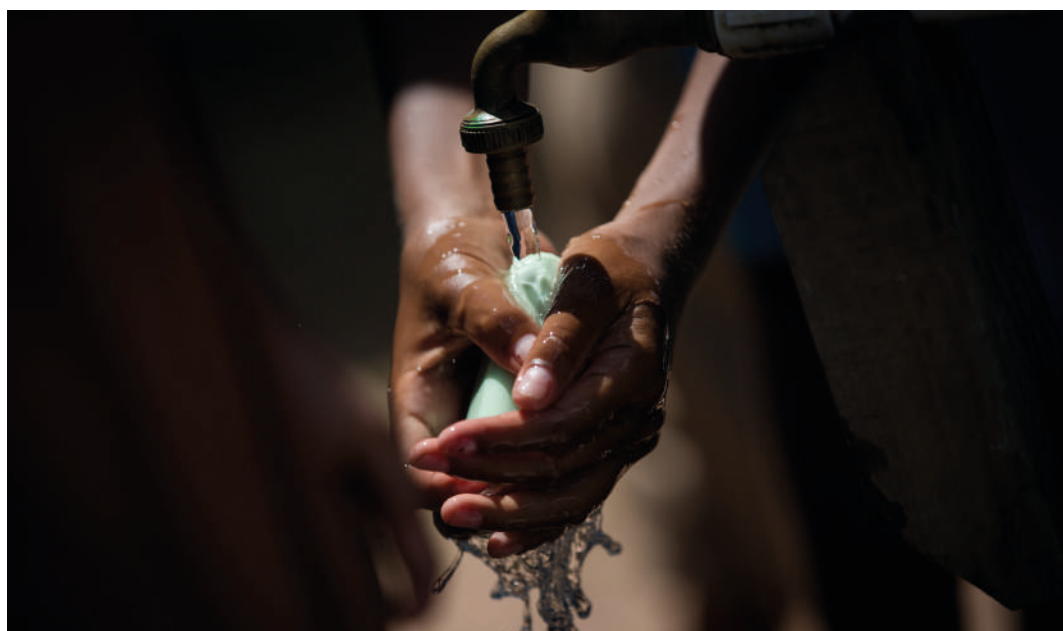
It is estimated that **three out of ten people, 2.3 billion globally, lack a facility with water and soap available to wash their hands at home, including 670 million who have no handwashing facility at all.** Facilities are also missing in many health care facilities, schools and public places, even though there is evidence that the presence of hand hygiene facilities is a strong determinant of regular hand hygiene in households and health care facilities.

Hand hygiene is one of the most important measures to prevent the spread of infectious diseases, including diarrhoeal diseases and respiratory diseases, such as COVID-19. The COVID-19 pandemic has brought unprecedented attention to the role of hand hygiene in controlling disease and has created a unique opportunity to position it as an important public policy issue. For instance, WHO states that control of COVID-19 requires a “comprehensive package of preventive measures, which includes frequent hand hygiene”.² However, there is a grave and very real risk that the emergency responses adopted during the pandemic will not evolve into long-term commitments to hand hygiene. Experience has shown that heightened interest in hand hygiene associated with disease outbreaks is often followed

by a rapid decline.³ There is, therefore, a significant risk that this crucial moment of opportunity will be lost.

This report outlines the extent of the challenge in making sure hand hygiene is available to everyone across multiple settings, including schools, health care facilities, workplaces and public spaces. It offers concrete examples of success in a number of countries, and outlines the key actions governments and their development partners should take to make hand hygiene for all a reality.

The evidence shows that hand hygiene is a highly cost-effective investment, providing outsized health benefits for relatively little cost. Both citizens and governments have a role to play. **Governments should show leadership and make hand hygiene a public policy issue.** Individuals should adopt and maintain hand hygiene behaviours, and demand that others do the same. Strategic investments should be made by governments in promotion and capacity-building to leverage investments made by households and businesses. Governments should ensure that water is easily accessible to make hand hygiene possible everywhere, and that hand hygiene facilities are available and used in every health care facility and school.



1.2

A timeline of hand hygiene history

The history of hand hygiene begins in the mid-nineteenth century. In 1847, the hand-hygiene pioneer Ignaz Semmelweis championed handwashing with a chlorinated lime solution as a way to reduce the terrifyingly high rates of mortality in maternity clinics, publishing a book in 1861 that made the link between puerperal fever (also known as “childbed fever”) and the lack of hand hygiene by attending doctors.⁴ Florence Nightingale implemented hygiene measures, including handwashing by staff, in the hospitals of the Crimean War and showed statistically that these measures reduced mortality among soldiers.

Over time, the evidence expanded, and hand hygiene was shown to help prevent a range of respiratory and diarrhoeal diseases and be crucial in fighting bacterial infections in health care facilities. In the early years of the new millennium, the profile of hand hygiene as a vital public health intervention rose, with increasing engagement of social and behavioural scientists. Additionally, the private sector began playing an important role, bringing marketing expertise and advice on how to improve markets for hand hygiene products. This led to the emergence of multi-stakeholder partnerships and the development of a range of resources.

The Public-Private Partnership for Handwashing was launched in 2001 by mem-

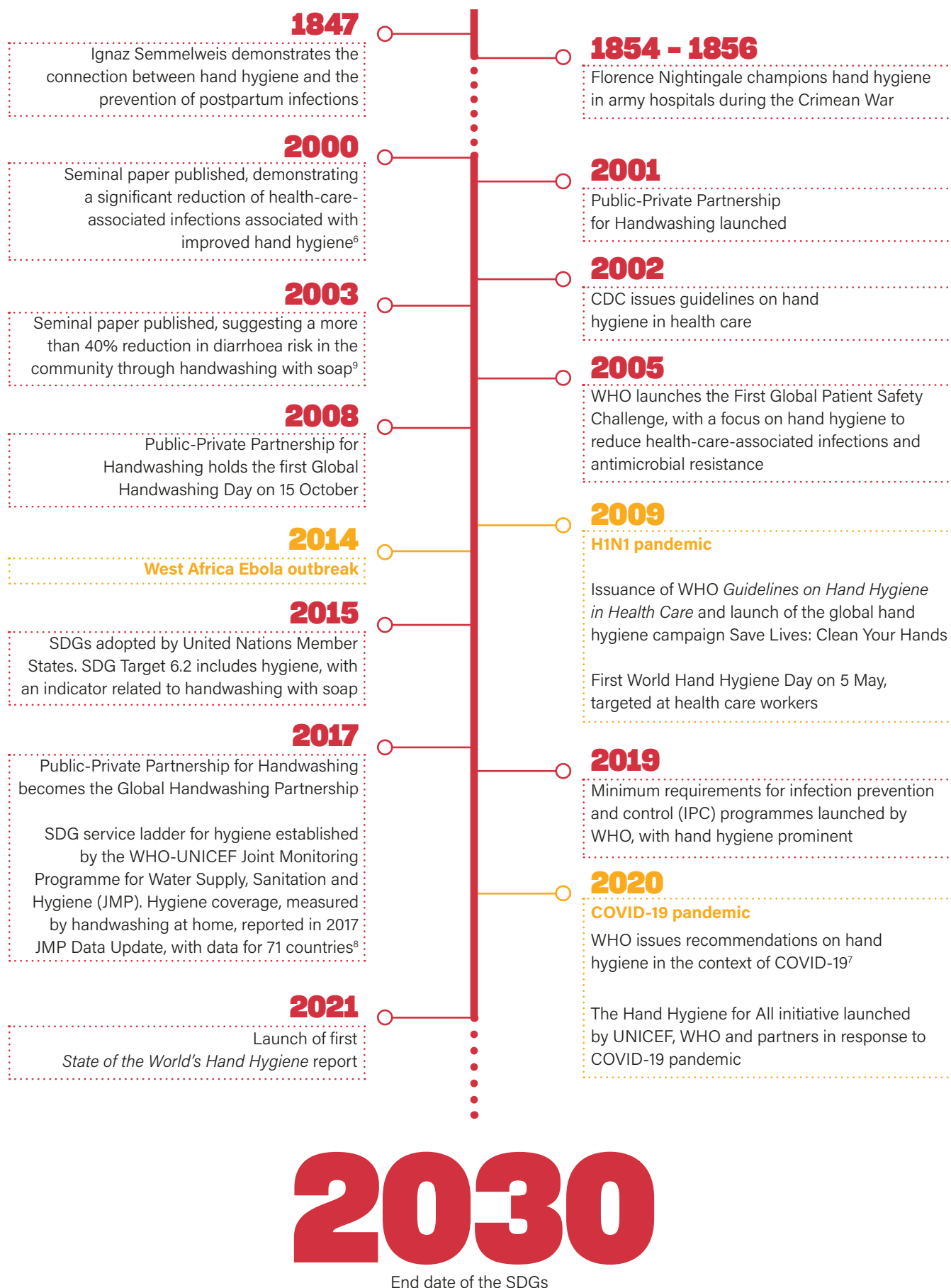
bers that included the World Bank, the Centres for Disease Control and Prevention (CDC), UNICEF, Johns Hopkins University, the London School of Hygiene and Tropical Medicine, the United States Agency for International Development (USAID), Unilever, Procter and Gamble and Colgate-Palmolive. The following year, an important set of guidelines was published by partnership member CDC. A few years later, the partnership launched Global Handwashing Day, which is now observed annually on 15 October by over one hundred countries, with schoolchildren as particularly enthusiastic participants. The partnership has continued to expand and broaden, and has almost 40 members and affiliates.

In parallel, WHO issued the *WHO Guidelines on Hand Hygiene in Health Care*, along with an improvement strategy, assessment tools and improvement toolkit, and has continued to update and add to these resources.⁵

Experience has shown that progress on hand hygiene is periodically accelerated by high-profile disease outbreaks, including H1N1 influenza, Ebola viral disease and, most recently, COVID-19. In response to COVID-19, governments have promoted hand hygiene, not only as a first line of defence in controlling the pandemic, but also to increase resilience to future disease outbreaks.

FIGURE 1

A timeline of progress in hand hygiene



1.3

Things you need to know before reading this report

While definitions of hygiene can be broad, this report focuses on hand hygiene specifically, and even more specifically, on *handwashing with soap*. Good hand hygiene entails the effective removal of germs from hands.

Although liquid and gel hand sanitizers, such as ABHRs, play an important role in health care facilities, and are increasingly used to supplement handwashing in schools, offices and public places, this report focuses on handwashing with soap as a widely practised behaviour in industrialized and developing countries alike, and the one that is most common in households.

Gathering information on handwashing is difficult. Simply asking people if they wash their hands is a notoriously unreliable method. Observing handwashing can

also introduce bias when the observed are aware their behaviour is being monitored, and is costly to carry out at scale. In health care facilities, WHO guidelines call for hand hygiene to be monitored through direct observation. There is also growing interest in electronic monitoring, focused on the point of care, as reliable systems are developed.

In light of the difficulty in measuring hand hygiene through observation, progress towards the global SDG target on hygiene is measured with a simple indicator related to the existence of facilities for handwashing with soap at the household level (Indicator 6.2.1b: 'the proportion of the population with handwashing facilities with soap and water at home'). The presence of hand hygiene facilities is also used as a proxy measure in measuring coverage in schools and health care facilities.

Defining handwashing facilities

BOX 2

Source: JMP

Handwashing facilities may be fixed or mobile, and include a sink with tap water, buckets with taps, tip-py-taps, and jugs or basins designated for handwa-

shing. Soap includes bar soap, liquid soap, powder detergent, and soapy water, but does not include ash, soil, sand or other handwashing agents.

The hand hygiene service ladder

Hand hygiene is monitored globally by the JMP using globally agreed-upon definitions and methods. Households or

schools that have a handwashing facility with soap and water available on premises meet the criteria for 'basic' hygiene service. These facilities may take several forms, as may the soap (see Box 2). Households or schools that have a facility but lack water or soap are classified as

having 'limited' service, and are distinguished from households or schools that have no facility at all. In some cultures, ash, soil, sand or other materials are used as handwashing agents, but these are less effective than soap and are therefore counted as a limited service. In health care facilities, ABHRs are also included

in the definition of hygiene service, and are considered the "gold standard", when available and if hands are not visibly dirty (see Box 3).¹⁰

The SDG "service ladder" for hygiene in households, schools and health care facilities is shown in Table 1.

TABLE 1 **SDG service ladder for hygiene**

SERVICE LEVEL	DEFINITION
Basic	For households: Availability of a handwashing facility on premises with soap and water. For schools: Handwashing facilities with water and soap available at the school at the time of the survey. For health care facilities: A functional hand hygiene facility with water and soap and/or ABHR at points of care, and within five metres of the toilets.
Limited	For households: Availability of a handwashing facility on premises lacking soap and/or water. For schools: Handwashing facilities with water but no soap available at the school at the time of the survey. For health care facilities: Functional hand hygiene facilities are available either at points of care or toilets, but not both.
No Facility	For households: No handwashing facility on premises. For schools: No handwashing facilities or no water available at the school. For health care facilities: No functional hand hygiene facilities are available either at points of care or toilets.

Source: WHO-UNICEF Joint Monitoring Programme

Soap and water, or alcohol-based hand rub?

BOX 3

When practised correctly, it can be quicker, easier and more effective to clean hands with ABHR rather than washing hands with soap and water. Encouraging the use of ABHR by health care workers can greatly improve hand hygiene compliance, as well as providing an alternative when there are water shortages. However, ABHR is less effective when hands are visibly dirty or soiled with

blood or other bodily fluids. In such cases (and after using the toilet), handwashing with soap and water is recommended. Some pathogens (such as *Clostridium difficile*) may not be effectively removed or inactivated by ABHR. If exposure to such pathogens is strongly suspected or proven, handwashing with soap and water is the preferred means of hand hygiene.¹¹



© UNICEF/UNI357812/Buta

Drivers of hand hygiene behaviour

Behaviour is influenced by a range of social, environmental and psychological determinants. In domestic settings, some of the most influential determinants include knowledge, perception of risk, psychological trade-offs, characteristic traits such as gender or education, and availability of infrastructure. For instance, there is evidence that the presence of handwashing facilities acts as a cue or reminder and works to overcome some of the factors that may prevent handwashing.¹²

These determinants are factors that can be altered to help prompt a change in behaviour, such as handwashing with soap, and for a behaviour change intervention to be effective, it must address the factors that influence a behavioural outcome. Evidence shows that simply sharing knowledge of good hygiene practice rarely results in sustained behaviour change (i.e., knowledge is necessary but not sufficient). **Interventions to promote hand hygiene should be designed based on an understanding of what people care about, and should engage relevant social norms to trigger and reinforce handwashing practice.** While fear acts as a temporary stimulus for handwashing, for instance, during outbreaks of Ebola or COVID-19, this is often a temporary trigger, and when the threat recedes, so do the behaviours.

For sustained hand hygiene improvements, it is important to con-

sider motives and emotions that will change people's long-term mindset. These include affiliation (establishing a sense of solidarity in the home and society), nurture (the desire to care for, look after and protect children),¹³ and disgust (the desire to avoid anything contaminating).^{14,15,16}

Hygiene behaviour change programmes have been shown to be successful if they use multimodal approaches, address a range of determinants, use emotions (such as disgust, nurture, social status and affiliation), and change behavioural settings through the placement of infrastructure with visual cues (sometimes referred to as 'nudges') to change the environment where behaviour occurs.^{17,18} While altering the physical environment can nudge handwashing improvement, the science of habit formation has also been applied to handwashing. This aims to shift handwashing behaviour from a goal-oriented, conscious practice to an unconscious behaviour that is reflexively practised.¹⁹

For health care settings, WHO has developed a multimodal approach based on the premise that multiple elements, all essential and complementary, must be in place and used in combination to achieve optimal hand hygiene.²⁰ The five elements are: system change; training and education; monitoring and feedback; reminders and communications; and the presence of a safety culture. The multimodal approach has been applied in a wide range of countries since 2006, and has been demonstrated to be an effective way to improve hand hygiene practices and patient outcomes.^{21,22}



© UNICEF/UN0224066/Sokhin

Why invest in hand hygiene?

- 2.1 Hand hygiene protects health
- 2.2 Hand hygiene has positive economic impacts
- 2.3 Hand hygiene is good for society as a whole

2.1

Hand hygiene protects health

The simple act of cleaning hands can save lives and reduce illness by helping prevent the spread of infectious diseases.

These diseases can be caused by bacterial, viral or protozoan pathogens (germs) transmitted through the air or via surfaces, food or human faeces. Because people frequently touch their face, food and surfaces, hands play a significant role in spreading disease.

It is estimated that half a million people die each year from diarrhoea or acute respiratory infections that could have been prevented with good hand hygiene. The health conditions that can be reduced through hand hygiene include:

Acute respiratory infections, which are a leading cause of morbidity and mortality in the world.²³ These include COVID-19 and pneumonia, the single largest infectious cause of death among children under 5 years of age in low- and middle-income countries.²⁴ Estimates from 2016 show that, 370,000 deaths caused by acute respiratory infections each year could have been prevented through basic hand hygiene.²⁵

Diarrhoeal disease, which is a major public health concern and a leading cause of disease and death among children under 5 years of age in low- and middle-income countries. This includes cholera, an acute diarrhoeal disease that can kill within hours if left untreated. Based on estimates from 2016, it is estimated that 165,000 deaths caused by diarrhoea each year could be prevented through basic hand hygiene.²⁶

Stunting, which can be caused by repeated bouts of diarrhoea and affects nearly one quarter of children under 5 years of age globally.²⁷ Poor physical growth in early life affects cognitive development and increases the risk of illness and death in childhood.²⁸

Sepsis, which is a preventable, life-threatening condition characterized by severe organ dysfunction, and is often related to inadequate quality of care. Sepsis accounts for a significant proportion of neonatal and maternal deaths globally, as well as health-care-associated infections.²⁹ Hand hygiene during labour, delivery and post-natal care is critical to reducing infection.

Health-care-associated infections, or nosocomial infections, are a leading cause of avoidable harm, jeopardize patient safety and represent a massive disease burden. The most common are surgical infections, hospital-acquired pneumonia, catheter-associated urinary tract infections, and bloodstream infections. Many are caused by antibiotic-resistant organisms. It is estimated that hand hygiene can reduce up to 50 per cent of these infections.³⁰

Hand hygiene also enables several additional indirect health benefits, including:

Unlocking other hygiene practices: The basin, water supply and soap required for handwashing unlock additional beneficial hygiene practices (e.g., facial cleanliness to reduce trachoma transmission).

Reducing the burden on the health system: By reducing the strain of infectious

diseases on the health system, hand hygiene can free up resources to address other health priorities.

Increasing health-care-seeking behaviour: In health care facilities, inadequate water, sanitation and hygiene (WASH) conditions, including a lack of handwashing facilities, have a negative impact on staff morale, patient health-care-seeking behaviour (especially among pregnant women) and their overall health care experience.³¹

Improving overall quality of care in health care settings: As an action relevant to all those working in health care settings, hand hygiene can be an entry point that catalyses other quality improvements.

Reducing antimicrobial resistance: By reducing the need to treat infectious diseases with antibiotics, hand hygiene can substantially reduce antimicrobial resistance, extending the useful life of last-line-of-defence antimicrobials. By reducing the spread of antibiotic-resistant infections, it also reduces deaths and health costs due to untreatable infections, which often lead to sepsis.



© UNICEF/UN0414837/Naftalin

2.2

Hand hygiene has positive economic impacts

Significant financial costs result from sickness and death related to poor hand hygiene. These costs fall on both the patient and the health system. They include *direct costs*, such as the costs of medical treatment borne by households or governments for preventable diseases, and non-medical costs, including out-of-pocket payments

and travel costs for households seeking health care. *Indirect costs* include income loss, school absence and lost productivity associated with sickness.

An influential review of the cost-effectiveness of interventions for improving child health concluded that **domestic hand hygiene promotion is highly cost-effective**.

fective, on par with oral rehydration therapy and most childhood vaccinations (see Box 4).³² A 2012 study by the Organization for Economic Co-operation and Development (OECD) suggests that, in the organization's member states, investments in hand hygiene in health care facilities generate savings in health expenditure that are, on average, 15 times the implementation costs.³³

Hand hygiene in the workplace has positive economic benefits as it protects both workers and, in retail and hospitality settings, customers. Hand hygiene is thus considered essential to ensuring business continuity and is increasingly seen as an important investment for the private sector.³⁴ It is also essential in countries wishing to build their tourism industry.

Handwashing is a highly cost-effective intervention in domestic settings

BOX 4

A 2002 study considered a hygiene promotion intervention implemented in urban Burkina Faso.³⁵ The success of the intervention was evaluated through a study of handwashing uptake and behaviour by mothers of young children, and the findings from this evaluation were combined with secondary data on health risk reduction in the intervention area. The study examined the direct medical savings for the government and households, due to diarrhoeal disease, plus indirect savings related to caretaker time and lost productivity associated with child death. The authors concluded that the cost to society (the provider of the intervention plus the households who participated) of the intervention was equal to US\$51 per case of diarrhoea averted (2002 prices), falling to US\$7.90 if indirect benefits were included. At the time, the annual cost of the pro-

gramme was 0.001 per cent of the annual health budget of Burkina Faso.

Such results are hard to interpret alone. However, the Disease Control Priorities (DCP) project provides combined assessments of the cost-effectiveness of health interventions, measured in terms of the extent to which they can avert 'disability-adjusted life years' (DALYs). DALYs are the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability. In 2016, drawing on the study in Burkina Faso, the DCP project estimated that the cost for every DALY averted through handwashing was US\$88-225. On this basis, the DCP project rated handwashing as a very cost-effective intervention for child health, placing it on a similar level to oral rehydration therapy and most childhood vaccinations.³⁶





© UNICEF/UN0225386/Brown

2.3

Hand hygiene is good for society as a whole

In addition to the health benefits, good hand hygiene has positive societal impacts that cannot easily be quantified. For instance, access to improved WASH services has been shown to reduce stress, particularly among women and people living with disabilities, by increasing feelings of dignity, privacy and safety, and decreasing feelings related to disgust, fear of violence, injury and shame. The ability to maintain personal hygiene has an important role to play in this, as it is linked to feelings of dignity and pride.³⁷

Research in Malawi demonstrated that the adverse effects of poor hand hygiene disproportionately affect people living with disabilities.³⁸ Globally, it has been shown that the most vulnerable populations and those in resource-poor settings suffer the most from the negative impacts of poor WASH.³⁹ Improvements in hand hygiene, therefore, contribute to reducing inequality.

The infectious diseases that hand hygiene can help control keep kids out of school and adults out of work, affecting the short- and long-term economic well-being of households. Because poorer households are more exposed to key factors that cause illness, a pattern of decline in health and socioeconomic status can be created. Reduced school attainment and household productivity affect national economic development, which, in turn, affects a country's ability to provide essential services. Underfunded health services are further pressured by the need to treat preventable infectious diseases, with far-reaching implications. This cycle of decline is exacerbated by emerging global trends, such as the increased risk of global disease outbreaks and antimicrobial resistance.

Just as inadequate hand hygiene can create this downward cycle, good hand hy-

giene can lead to an upward spiral of mutually reinforcing improved health, social and economic outcomes. Keeping hands free of germs in the household, at school, and when visiting health services keeps infectious diseases at bay, enabling individuals to survive, thrive and make an active contribution to the national economy. It also ensures that everyone can protect

themselves and others when infectious disease outbreaks, such as COVID-19, occur, curbing transmission and mitigating the socioeconomic effects of other response measures. As the COVID-19 pandemic has starkly illustrated, these effects run deep, with long-lasting impacts on health care services, society and the economy.





© UNICEF/UN0368346/Emorut

What is the current status of progress in global hand hygiene?

-
- 3.1 Monitoring hand hygiene
 - 3.2 Hand hygiene in households
 - 3.3 Hand hygiene in schools
 - 3.4 Hand hygiene in health care facilities
 - 3.5 Hand hygiene in other settings
-



© UNICEF/UNI226397/Naftalin

3.1

Monitoring hand hygiene

Data on drinking water and sanitation services have been routinely collected for many years, but data on hygiene are scarce. Data collection for handwashing has only recently become standardized. Both the UNICEF Multiple Indicator Cluster Surveys (MICS) and USAID-supported Demographic and Health Surveys (DHS) added handwashing questions to their standard questionnaires in 2009. These, and an increasing number of other household surveys, now include a handwashing module, which involves direct observation of handwashing facilities.⁴⁰ Enumerators ask to see the place where household members most often wash their hands and then record the type of facility used and whether water and soap were available at the time of the survey.

Countries that participate in internationally managed household survey programmes have collected one or more rounds of data on hygiene services. However, upper-middle and high-income countries rarely include questions about handwashing facilities in household surveys and have very low data coverage.

In low- and middle-income countries, the availability of hygiene-related data has steadily progressed over the last few years, with large increases at the regional level as populous countries collected data for the first time (e.g., India in Central and Southern Asia; Papua New Guinea in Oceania). However, some countries have not collected data on basic hygiene recently, and only four SDG regions had enough data to allow the JMP, which

monitors progress towards the WASH targets of the SDGs, to produce regional estimates for basic hygiene in 2020.

In health care settings, data collection on hand hygiene has been undertaken by WHO through global surveys in 2011, 2015 and 2019.^{41,42,43} Health facilities complete a standardized self-assessment tool based on the five elements of the WHO Multimodal Hand Hygiene Improvement Strategy.⁴⁴ The JMP maintains a global database on WASH in health care facilities, which draws upon these assessments and includes national data from 165 countries and nearly 800,000 health care facilities. Data have been extracted from 476 nationally representative facility assessments and mapped to a standardized set of global indicators, including those for hygiene. Despite these efforts, the proportion of the population in each region and globally for which data were available is low. Globally, in 2019, data on basic hygiene services in health care facilities were available for only 26 per cent of the population, and for only 22 per cent in hospital settings.

In terms of WASH in schools, the primary data sources are routine administrative reporting through education management information systems (EMIS) and periodic censuses or surveys of school facilities. The JMP global database on WASH in schools contains over a thousand national datasets. Currently, these can be used to produce estimates for WASH in schools for 173 countries, areas and territories. Among these, 110 countries, representing 57 per cent of the global school-age population, had sufficient data to estimate national coverage of basic hygiene in schools. In 2019, estimates could be computed for all but one SDG region. While still less than ideal, this represents an improvement in data availability since the JMP baseline report in 2018, which included national estimates of basic hygiene for only 81 countries.

The lack of data on hand hygiene must be addressed as it makes tracking progress against national and international targets problematic, and makes decisions about policy, programming and investment difficult for governments.

3.2

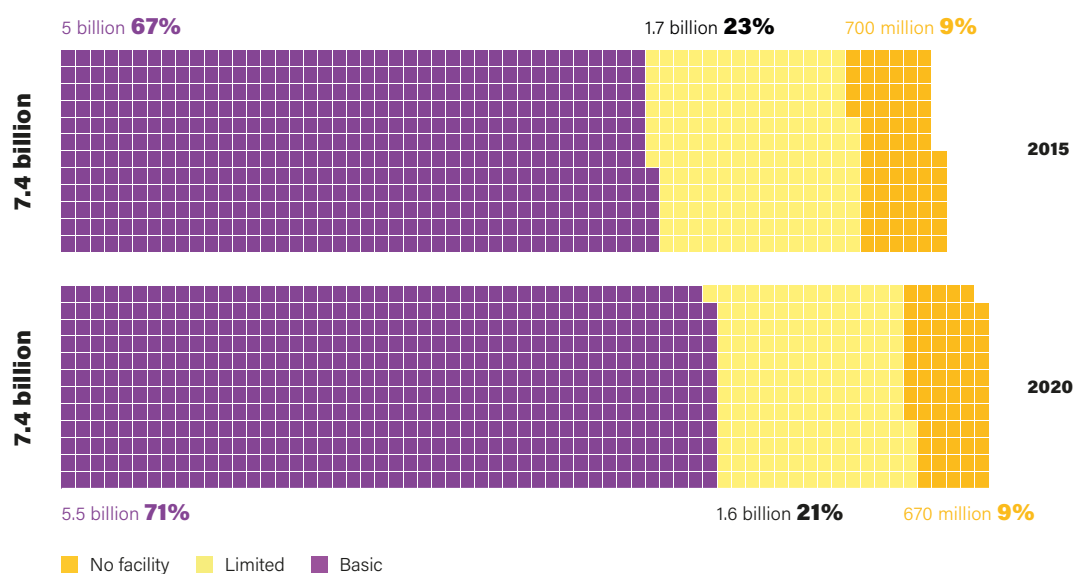
Hand hygiene in households

Since 2015, the global population with access to basic hygiene services at home has increased by over 500 million, from 5 billion to 5.5 billion people. The proportion of the global population with access to basic hy-

giene is now estimated to be 71 per cent. However, it is estimated that in 2020, 2.3 billion people still lacked basic hand hygiene services at home, including 670 million with no handwashing facility at all (see Figure 2).

FIGURE 2 Progress in coverage of hygiene services between 2015 and 2020

Between 2015 and 2020, half a billion people gained access to basic hygiene services

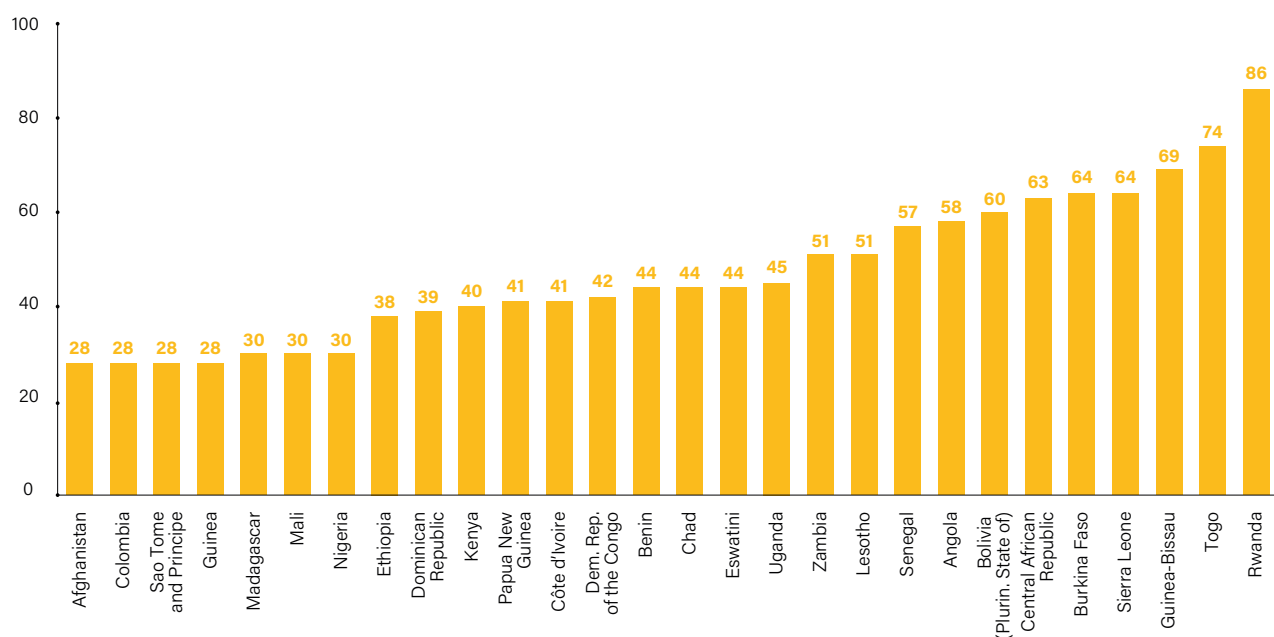


The number of people with no handwashing facility only decreased slightly over the first five years of the SDG period. Over half of these people (374 million)

live in fragile contexts. In 28 countries, more than one quarter of the population had no handwashing facility at home (see Figure 3).

FIGURE 3 Population with no handwashing facility at home, 2020 (%)

In 28 countries, at least one quarter of the population had no handwashing facility at home in 2020



In some of these countries, surveys have not counted mobile handwashing devices, such as jugs and portable basins, and may underestimate access to handwashing facilities. This may be the case for countries in sub-Saharan Africa in particular. For instance, in Togo, a survey in 2017 found nearly twice as many households had basic handwashing facilities compared to a survey in 2014 that did not include mobile devices (however, even when considering mobile devices, the large majority of households in Togo still had no handwashing facility at all). Since 2016, household survey questions have been refined to include response categories for different types of handwashing facilities, including both fixed and mobile devices. These surveys have shown that mobile devices are used by over half of the population in many sub-Saharan countries.

Household coverage in urban areas is generally higher than in rural areas. For instance, in sub-Saharan Africa, 37 per cent of the urban population has a basic hygiene service, while only 18 per cent of the rural population does. However, rates of progress tend to be higher in rural areas. For instance, in the group of countries categorized as fragile, the coverage of basic hygiene services in urban areas only increased from 58 to 59 per cent between 2015 and 2020, while in rural areas, the increase was from 33 to 40 per cent.

There are significant inequalities in access to basic hygiene related to wealth. These can be demonstrated by comparing access between the richest fifth of the population and the poorest fifth. For example, in Burundi in 2017, 62 per cent of richest urban dwellers had access, 30 times the rate among the poorest, which was 2 per cent. In some cases, inequality ratios can be very high even if absolute gaps are not very large. In urban Liberia in 2020, the richest were 32 times more likely to have access to basic handwashing than the poorest, because even though coverage was low among the richest (17 per cent), it was exceedingly rare among the poorest (0.5 per cent).

Within countries, there can be large equality gaps by geographical area, urban/rural locations, and wealth quintiles, as can be seen in the data for Haiti in Figure 4. National coverage of basic hygiene services is just 22 per cent, compared with 92 per cent in Cuba, but there are also significant inequalities between population sub-groups. Coverage is twice as high in urban areas (28 per cent) as it is in rural areas (15 per cent), and three times higher among the richest fifth of the population (40 per cent) than among the poorest fifth (13 per cent). In most sub-national regions, about 20 per cent of people have basic hygiene services, but coverage is much higher in Aire Métropolitaine, which includes the capital Port-au-Prince, and much lower in the sub-national area called Centre.



FIGURE 4 Population with basic hygiene facilities in Haiti, disaggregated by SDG region, country, urban-rural, sub-national region and wealth quintiles, (%)

Country averages hide disparities in access to basic hygiene facilities

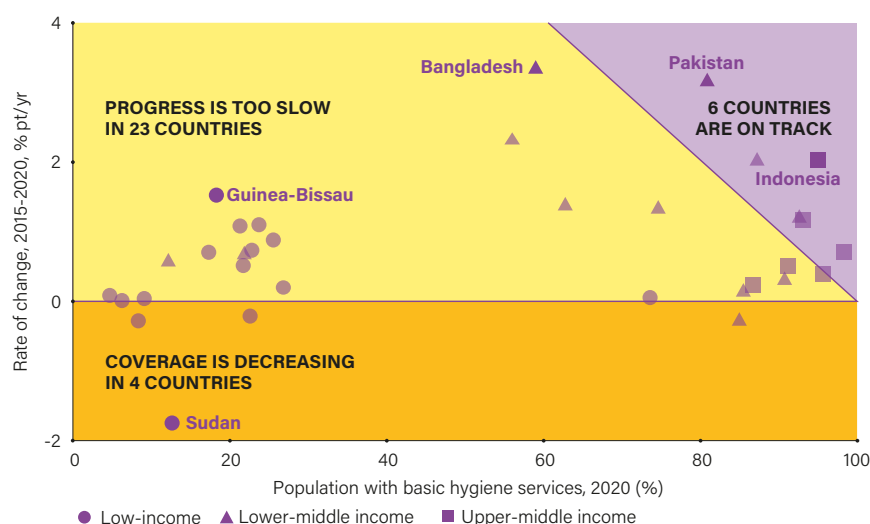


Note: Sub-national and wealth quintiles data are extracted from the Haiti 2017 DHS. Other data are JMP 2021 estimates for hygiene. Sources: JMP 2021 and Haiti DHS 2017.

Of the 73 countries that had not achieved universal access to basic hygiene services by 2020, only six were on track to achieve universal coverage (defined as over 99 per cent coverage) by 2030. As shown in Figure 5, in 60 countries, progress is too slow, and in seven, coverage is actually decreasing.

FIGURE 5 Progress towards universal basic hygiene among countries with <99% coverage in 2020, by national income category, 2015-2020

Only 6 out of 33 countries with trend data are on track to achieve universal access to basic hygiene services by 2030



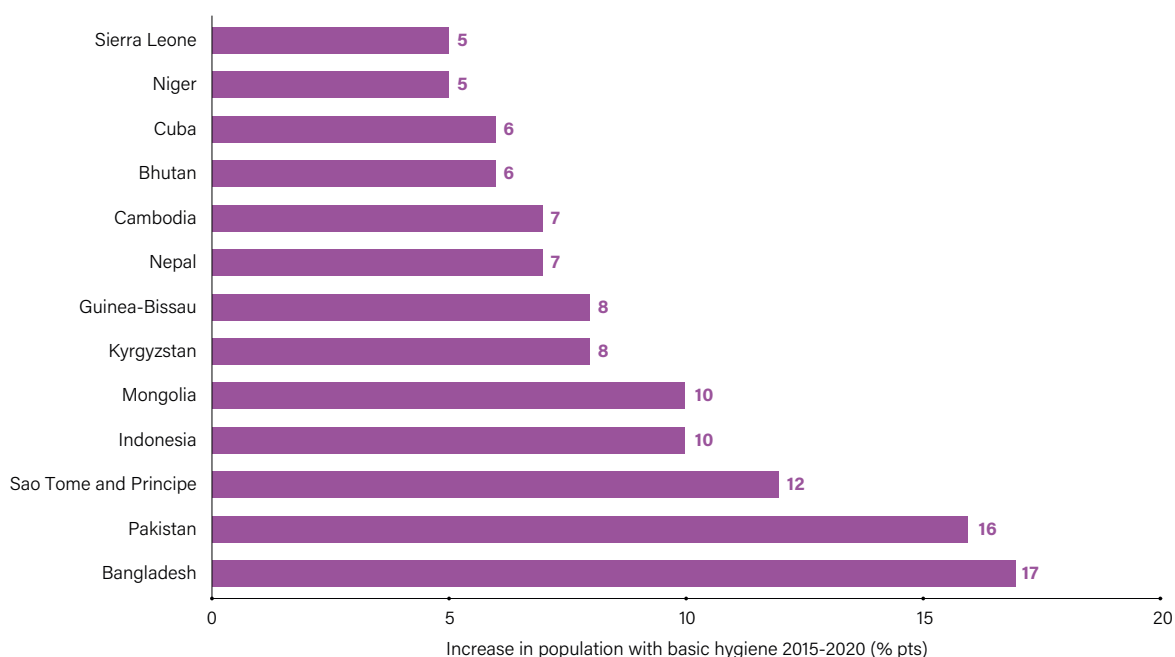
Note: Includes 33 countries with at least 1% lacking access to basic hygiene services in 2020. Does not include two countries that already had >99% access to basic hygiene services in 2020.

However, progress is being made, and, as can be seen from Figure 6, the rate of change achieved in some countries represents the step change that is needed. Bangladesh, Pakistan, Sao Tome and Principe, Indonesia and Mongolia have all increased the proportion of their

populations with basic hygiene services at home by over 10 percentage points over the last five years. Bangladesh has achieved a 17 percentage-point increase, and even low-income countries, such as Guinea-Bissau, have achieved significant rates of change.

FIGURE 6 Top countries in expanding hand hygiene coverage, 2015-2020

Since 2015, 13 countries have increased basic hygiene by at least 5 percentage points



As Figure 7 shows, households are more likely to have access to basic hygiene services if they already have drinking water accessible on premises (that is, water that does not have to be carried from a distant source). However, other factors are also important. For instance, in Bolivia, where 86 per cent of the population

have improved water on premises, only 27 per cent have a basic hygiene service; availability of soap is the limiting factor. On the other hand, the availability of basic hygiene services in Mongolia is high, even though relatively few households have on-premises water supply.

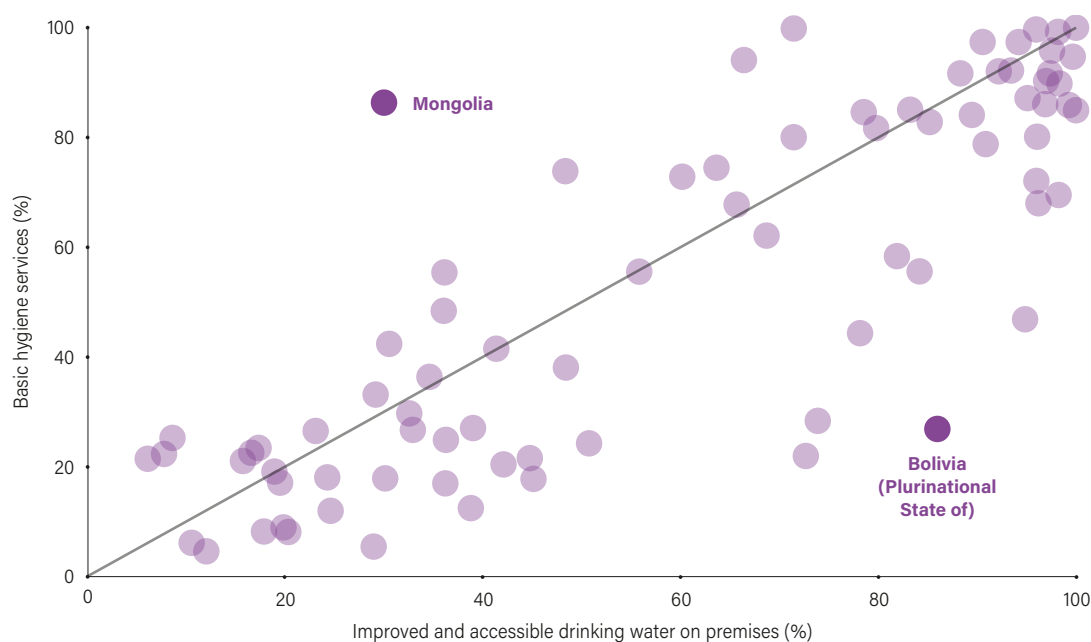




© UNICEF/UNI216423/Nybo

FIGURE 7 Basic hygiene vs improved and accessible water on premises, (%)

Populations with drinking water accessible on premises do not always have basic hygiene services

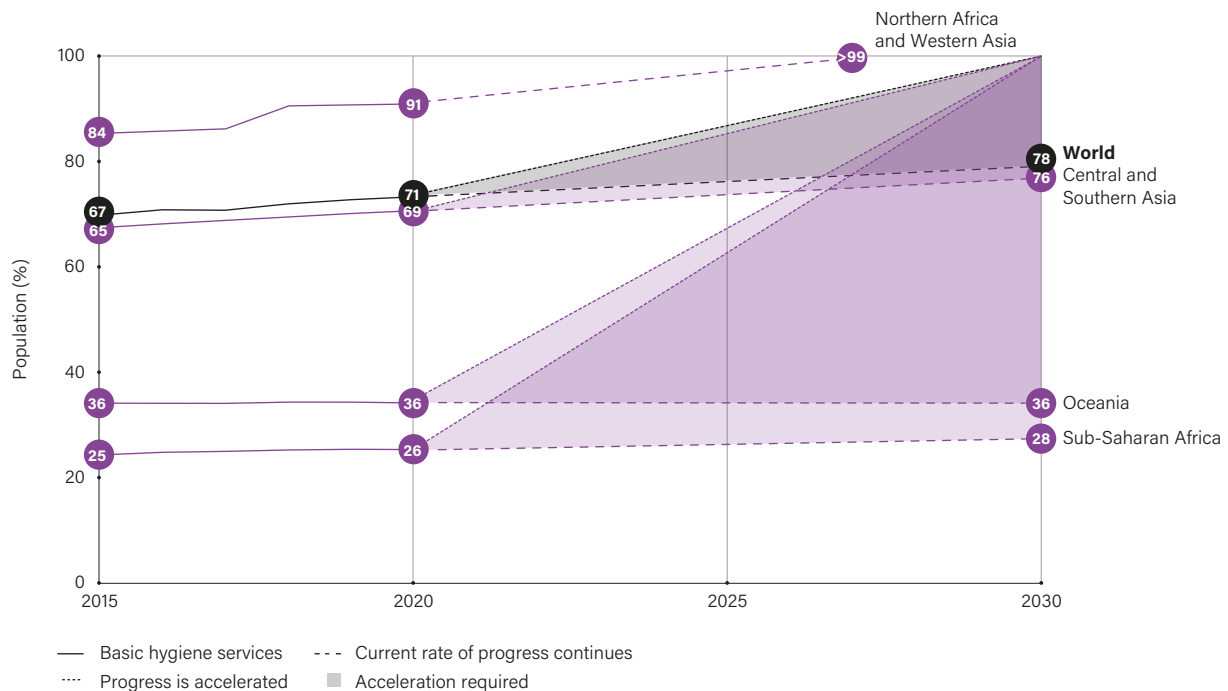


With the currently available data, trends to 2030 can be estimated for four of the SDG regions. As shown in Figure 8, only one region is on track to achieve universal access to basic hygiene services by 2030 (defined as greater than 99 per cent access). **If current rates of progress continue, by 2030, the world will have reached only 78 per cent coverage of basic hygiene services, leaving 1.9 billion people without facilities to wash their hands at home.**

If current trends persist, Northern Africa and Western Asia will reach universal coverage between 2025 and 2030, while the data suggest that there has been relatively little progress in Oceania and sub-Saharan Africa over the first five years of the SDG period. If a step change in progress is not achieved, they could end the 15-year SDG period with essentially the same access to hand hygiene as they started.

FIGURE 8 Progress in basic hygiene services (2015-2020), and acceleration needed to reach universal coverage by 2030

Only 1 of 4 SDG regions is on track to achieve universal access to basic hygiene services by 2030



3.3

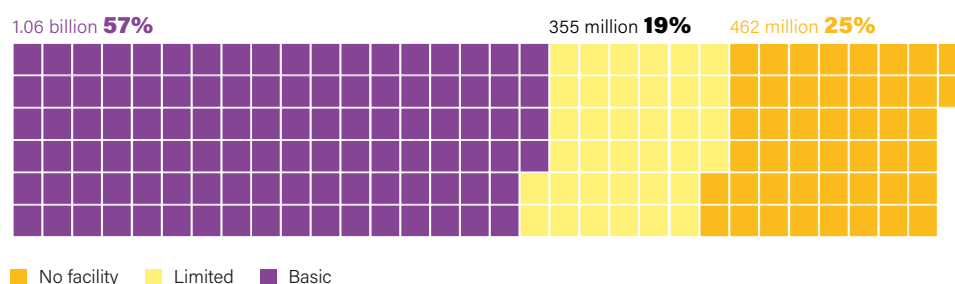
Hand hygiene in schools

It is estimated that in 2019, 57 per cent of schools globally had a basic hygiene service (handwashing facilities and soap and water), 19 per cent had a limited service (handwashing facilities with water but no soap available), and 25 per cent had no

service (no facilities or no water at all). This means that **in 2019, 818 million children lacked a basic hygiene service at school, including 462 million children who attended schools with no hygiene service at all** (see Figure 9).

FIGURE 9 Hygiene in schools (% of schools and number of children)

Globally, almost half of schools do not have basic hygiene services

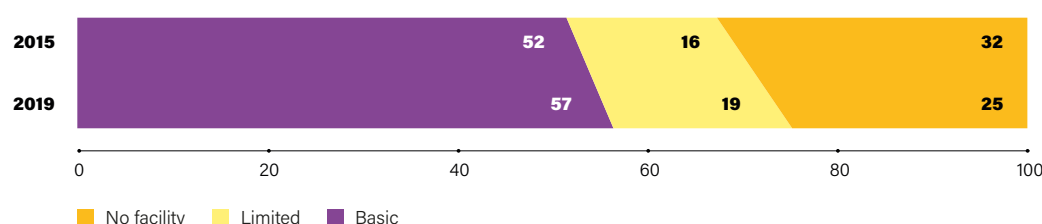


Since 2015, the coverage of basic hygiene in schools has risen only five percentage points, averaging one percentage point per year (see Figure 10). **Achieving universal access to basic hygiene ser-**

vices in schools by 2030 will require at least a four-fold increase in the current average rate of progress, much more in some regions and countries.

FIGURE 10 Trends in global coverage of hygiene in schools, 2015-2019, (% of schools)

Progress needs to quadruple over the next decade to achieve the SDG target for WASH in schools

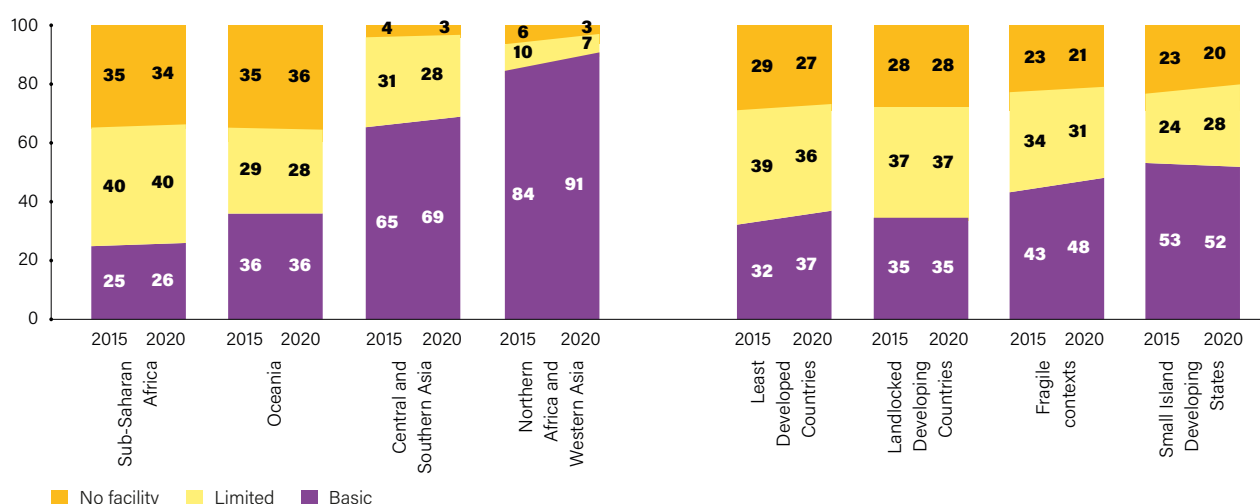


Data on hygiene services in schools are available for all regions except Eastern and Southeastern Asia. While some re-

gions are making progress, in others, progress is stagnating, and in some, coverage is declining (see Figure 11).

FIGURE 11 Regional coverage of hygiene in schools, 2015-2019 (%)

Regional progress is varied, with increasing coverage in some regions, and declines in others

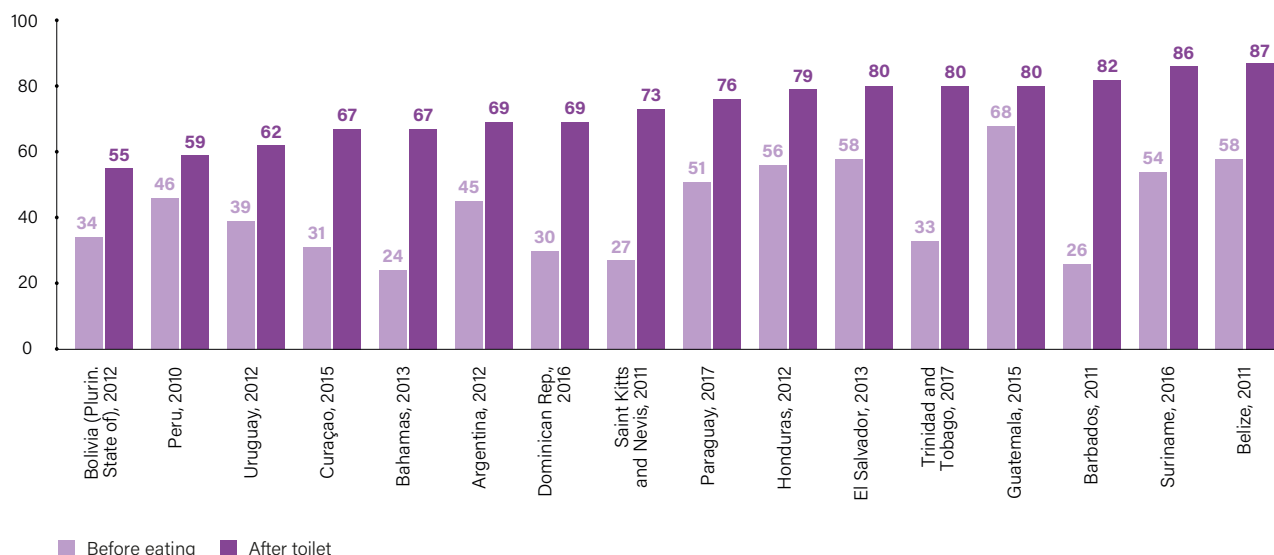


There are challenges associated with maintaining hand hygiene in schools that go beyond simply providing access to facilities. The availability of handwashing facilities at schools does not ensure students always wash their hands at critical times or use soap. The WHO Global School-based Health Survey, carried out

in more than 100 countries, asks secondary school students several questions on hygiene practices. As shown in Figure 12, data from this survey reveals that students in Latin America and the Caribbean are much more likely to report handwashing after using the toilet than before meals, a pattern seen in most regions.

FIGURE 12 Handwashing before eating and after using the toilet in schools in Latin America and the Caribbean, (%)

The availability of handwashing facilities at schools does not ensure students always wash their hands at critical times

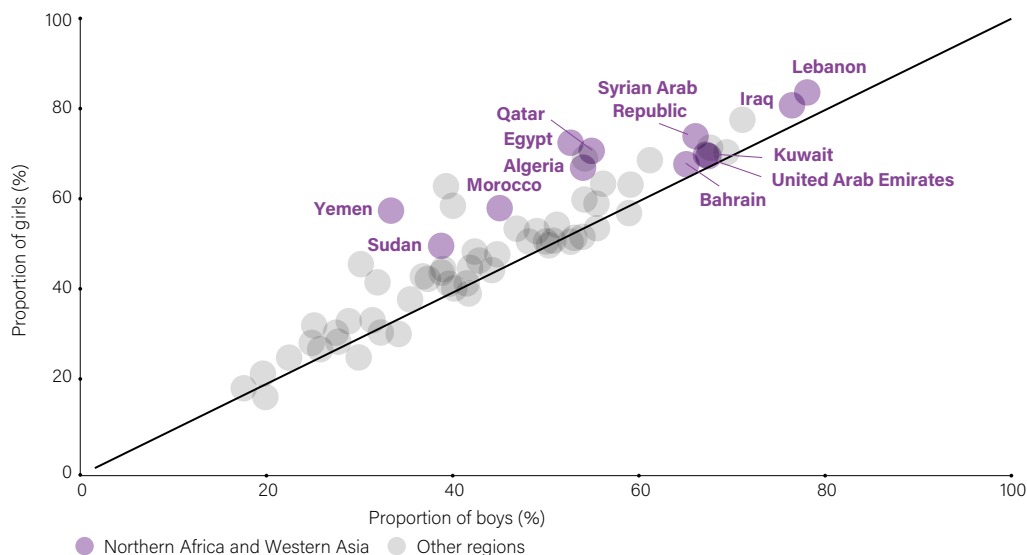


The survey also indicates that handwashing practices differ between boys and girls. In many countries, girls are more likely to report always washing their hands with soap, particularly in Northern Africa and Western Asia. For example, in Yemen, girls were almost twice as likely to report always washing their hands

with soap than boys (see Figure 13). These findings highlight the importance of providing sufficient handwashing facilities in key locations around the school, ensuring they are well maintained, and promoting changes in hygiene behaviour, including by practising group handwashing at critical times.

FIGURE 13 Use of soap for handwashing by girls and boys, (%)

Girls are more likely to report washing their hands with soap than boys





© WaterAid/ Basile Quedraogo (Mali)

3.4

Hand hygiene in health care facilities

In WHO's 2015 global guidelines on the core components for effective IPC in health care facilities, hand hygiene is recommended as a key national performance indicator. As countries have adopted this indicator, some have regularly published results, showing that setting hand hygiene targets, in conjunction with a comprehensive improvement strategy, leads to improved patient safety outcomes.^{45,46}

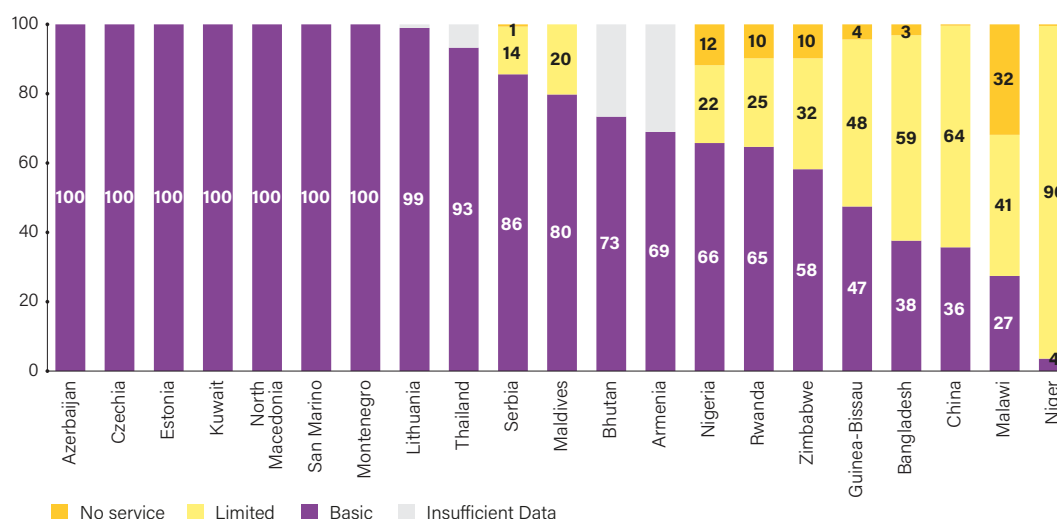
Basic hand hygiene services

The indicator that the JMP reports on related to basic hand hygiene services

in health care facilities calls for information about hand hygiene facilities at two types of locations: points of care and toilets. While health facility assessments usually collect information on hand hygiene at points of care, there is a scarcity of data on handwashing facilities in the toilets of health care facilities. For this reason, only 21 countries could report fully on the basic hand hygiene indicator in 2019. Regional estimates cannot be prepared for most SDG regions, but the little data available show that **7 per cent of health care facilities in sub-Saharan Africa, and 2 per cent globally, have no hand hygiene services at all.**

FIGURE 14 Hand hygiene services in health care facilities, by country, 2019, (%)

Many health care facilities in sub-Saharan Africa have no hand hygiene services at all



Hand hygiene at points of care

Availability of hand hygiene facilities at all points of care and hand hygiene compliance monitoring are among the WHO minimum requirements for IPC programmes in health care facilities.⁴⁷ WHO 'gold standard' indicators include the

availability of ABHR dispensers, for which the highest standard is 'available facility-wide with continuous supply at each point of care (with efficacy and tolerability proven); sink-to-bed ratio, continuous supply of clean running water, soap and single-use towels available at each sink, and a dedicated budget available for the continuous procurement of products.

Points of care

BOX 5

A point of care is defined as the place where three elements come together: the patient, the health care worker, and care or treatment involving contact with the patient. The concept embraces the need to perform hand hygiene at recommended moments exactly where care delivery takes place.

This requires that a hand hygiene product (for example, ABHR, or soap and water) be easily accessible and as close as possible – within arm's reach of where patient care or treatment is taking place. Point-of-care products should be accessible without having to leave the patient zone.

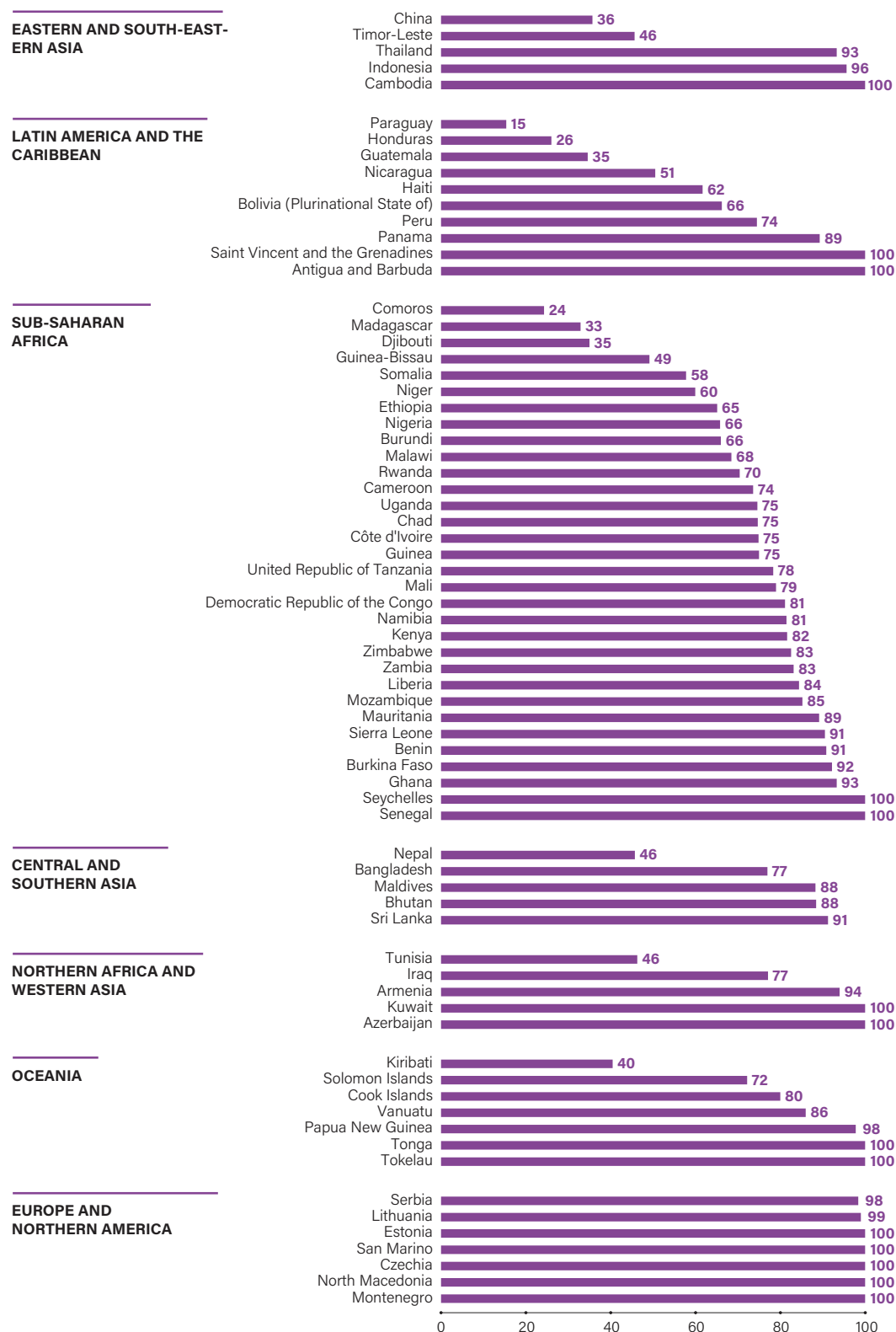
For monitoring by the JMP, a point of care is classified as having a hand hygiene facility if soap and water, or ABHR, are observed or reported. Where multiple points of care are assessed in a health care facility, priority is given to data from the general consultation or outpatient area. If data from general consultation areas and

outpatient departments are not available, the availability of hand hygiene facilities in any of the other available locations is recorded for use in calculating coverage. If hand hygiene facilities were required to be available at all points of care assessed, coverage figures would be much lower (see Figure 15).

FIGURE 15

Proportion of health care facilities with hand hygiene at points of care, 2019, (%)

In 12 of 71 countries with data, more than half of health care facilities lacked hand hygiene facilities at points of care



Global surveys conducted by WHO in 2011, 2015 and 2019 showed some progress in hand hygiene programmes glob-

ally, with a significant improvement in health facility scores over time.^{48,49}



© WaterAid/ Tom Greenwood (Cambodia)

3.5

Hand hygiene in other settings

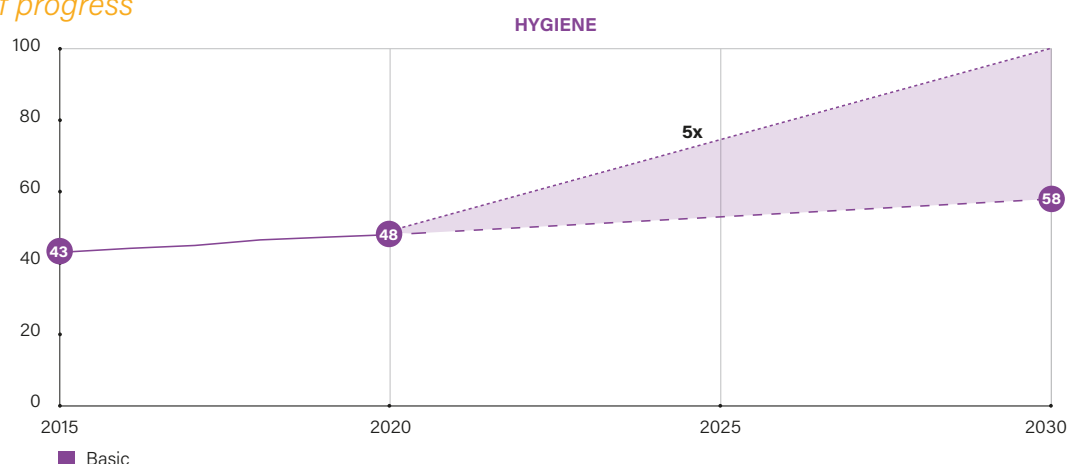
Fragile, conflict-affected and refugee settings

Fragility poses a major threat to the achievement of the SDGs. In 2020, the 57 countries categorized by the OECD as 'fragile' were home to 23 per cent of the world's population (1.8 billion people), and more than three quarters of those living in extreme poverty.

Countries suffering from fragility and conflict are making slow progress in hand hygiene. Given that between 2020 and 2015, coverage of basic hand hygiene in households in countries that are fragile and conflict-affected only increased by five percentage points (from 43 to 48 per cent), a five-fold increase in the rate of progress is needed to achieve universal hand hygiene by 2030 (see Figure 16).

FIGURE 16 Progress in basic hand hygiene services in fragile and conflict-affected countries, (%)

Achieving SDG targets in fragile contexts will require a dramatic acceleration in current rates of progress



Fragile contexts are typically characterized by very low levels of coverage, large displaced populations, and significant inequalities among sub-groups. For example, in Niger, less than one in four people had basic hygiene services in 2020 (see Figure 17). Disaggregated data are rarely available, but recently a multi-sector needs assessment of displaced populations in Niger was carried out. The as-

essment only covered vulnerable populations, and asked households about the availability of handwashing facilities with and without water and soap, but did not include direct observation, so the results are not directly comparable with JMP figures. The assessment found that coverage of basic hygiene services was nearly twice as high among returnees than among refugees.

FIGURE 17 Inequalities in basic hygiene services: Globally, in fragile contexts and Niger

Fragile countries such as Niger lag significantly in access to basic hygiene services



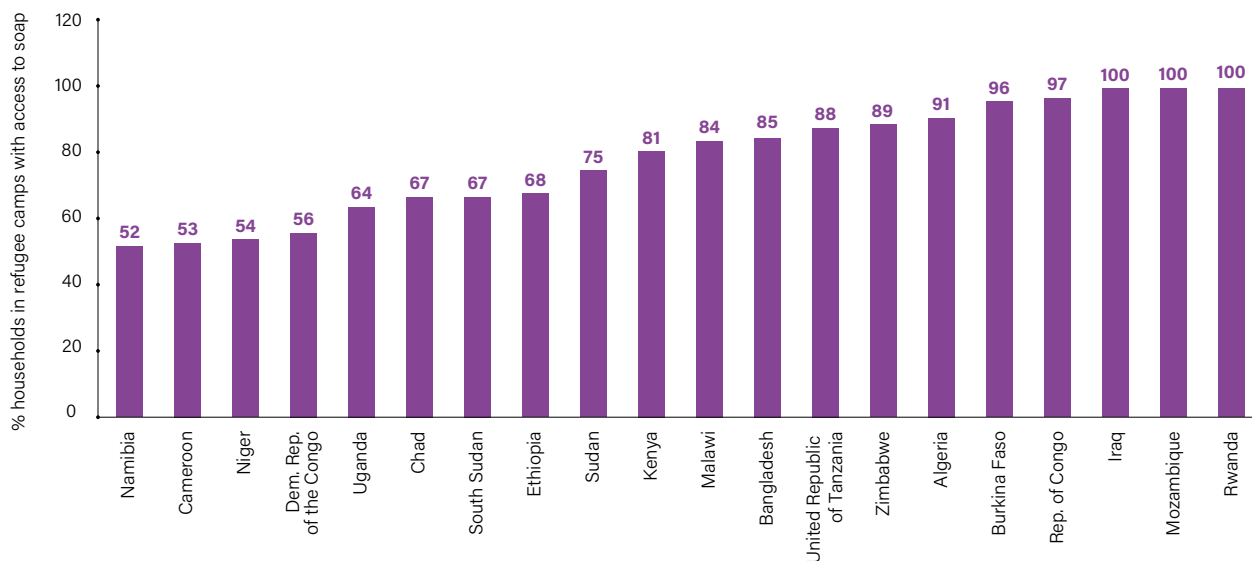
Note: Displaced population estimates are extracted from the Niger 2020 MSNA, other figures are JMP 2021 estimates

There is limited data on hand hygiene among refugees, but in 8 out of 20 countries for which the United Nations High Commis-

sion for Refugees (UNHCR) has data, fewer than 70 per cent of refugee households had access to soap (see Figure 18).

FIGURE 18 Households in refugee camps with access to soap, (%)

In almost half of countries with data, fewer than 70% of refugee households had access to soap



Source: UNHCR global database on WASH in refugee settings (household and community).

Public places

WHO recommends that universal access to hand hygiene facilities should be provided in front of all public buildings and transport hubs, such as markets, shops, places of worship, schools, health care facilities and train or bus stations. In addition, WHO recommends that functioning handwashing facilities, with water and soap, should be available within five metres of all toilets, both public and private.⁵⁰

However, few countries have made significant efforts to tackle the need for hand hygiene in public places. There are a few notable exceptions:

- In the Philippines, as part of the government's response to the COVID pandemic, handwashing facilities have been constructed in various

public markets, outdoor parks and sports centres around Metro Manila, with built-in behavioural 'nudges',⁵¹

- In Indonesia, promoting handwashing in public places, such as trains, buses and mosques, was part of the government's national campaign to use handwashing with soap, mask usage and physical distancing to allow the economy to remain open during the pandemic; and
- In Kenya, a coalition of businesses and private sector alliances, working in alignment with government priorities and supported by public, philanthropic and donor funding, harnessed their business competencies and facilitated the deployment of 5,400 handwashing facilities in public spaces, primarily the entrances to shops, in COVID-19 hotspots.⁵²

Monitoring hand hygiene in public places is also a challenge. While there are tools available for households, schools and health care facilities, there are very few dedicated to monitoring hand hygiene in public spaces. Some countries, including India, Indonesia and Nigeria, have developed monitoring mechanisms. However, there are many parameters involved (size of the public space, usage in terms of the number of people, their demographics, and the reasons for their attendance, as well as the length of time they remain), which make it very hard to estimate coverage. There are no standardized monitoring norms or indicators. The JMP has undertaken a review of the current methods used in order to inform the preparation of standard indicators and monitoring tools.⁵³

Workplaces

The International Labour Organization (ILO) points out that handwashing is essential at workplaces, where large numbers of people often congregate in close quarters.⁵⁴ Individuals may spend most of their waking hours at work, increasing the risk of infectious exposure, especially in high-density situations, not only from

other workers, but also from customers and clients. Handwashing is especially important in workplaces where people who are ill or vulnerable are concentrated (health care settings, nursing homes), where food is prepared and eaten, and in workplace accommodation.

Little data are available on handwashing availability in workplaces. The WASH-4Work partnership, a group of stakeholders from the public and private sectors, has developed a self-assessment tool. Companies can use the Excel-based tool to evaluate their implementation of access to safe WASH in the workplace. The assessment includes hand hygiene and helps companies score their performance in providing handwashing facilities, water, soap and hygiene training. The tool, which is housed on the website of the World Business Council for Sustainable Development (WBCSD), is designed to help identify areas for improvement, and support decision-making regarding investment and priority action.⁵⁵ In 2018, WBCSD reported that 47 companies had committed to improving WASH in their workplaces, impacting over 2.4 million employees in close to 6,000 sites in 170 countries.⁵⁶





© UNICEF/UNI1388537/DeJongh

What is the status of policy and finance for hand hygiene?

- 4.1. Status of national hygiene policies and plans
- 4.2. National targets for hygiene
- 4.3. The cost of achieving universal hand hygiene
- 4.4. Current investment levels and sources of funding

To understand progress in global hand hygiene, it is important to consider what efforts governments are undertaking to promote and foster it in terms of estab-

lishing policy. It is also important to understand the various ways in which hand hygiene is funded and paid for.

4.1

Status of national hygiene policies and plans

Since 2008, WHO has led the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) initiative. GLAAS monitors elements of national WASH systems, including policies and plans, national targets and budgets and expenditures. The most recent GLAAS cycle of data collection was in 2018/2019, and provides insights into what governments are doing to put policies and plans in place for hygiene.

It should be noted that GLAAS collects data on hygiene more broadly, and not hand hygiene specifically. Interpreting the data is further constrained by the fact that, as there is no globally agreed upon definition for hygiene, countries define hygiene differently when responding to the GLAAS country survey. Topics included under hygiene can range from handwashing to food hygiene, hygiene promotion and infrastructure for hygiene. The data are thus not always comparable. WHO is developing a more standardized definition of hygiene for future GLAAS data collection cycles.

In the GLAAS 2018/2019 country survey, 79 per cent of countries reported having national policies for hygiene promotion (meaning that policies are formally approved or undergoing revisions, but that the country has indicated a policy exists for hygiene), and 73

per cent reported having national plans. By comparison, almost all countries (94 per cent) reported having policies for drinking water and sanitation.

Hygiene promotion in the survey was broadly defined and could include activities designed to educate and advocate for the use of safe hygiene practices in general, so the hygiene policies reported by countries likely go beyond hand hygiene. Additionally, these countries may not have standalone hygiene policies; hygiene could have been included in other WASH policies.

When asked about the content of their hygiene policies, 93 per cent of the countries with policies reported that they included the promotion of handwashing with soap and water, and most policies and plans included hygiene promotion in schools and health care facilities.

While having policies and plans that address hygiene is important, to be effective they must be supported by sufficient human and financial resources (defined by GLAAS as having more than 75 per cent of what is needed to implement national WASH plans). As shown in Table 2, while the majority of countries reported they have policies and plans in place for hygiene, less than 10 per cent had sufficient human and financial resources to implement the plans.

TABLE 2 Number and percentage of countries with national hygiene plans that have been costed and supported by sufficient financial resources

Number of countries with national hygiene plans	COSTED PLANS AND SUFFICIENCY OF FINANCIAL RESOURCES		HUMAN RESOURCE ASSESSMENTS FOR PLANS AND SUFFICIENCY OF HUMAN RESOURCES	
	Percentage of countries with national plans that have been costed	Percentage of countries with costed plans reporting sufficient finances to implement plan*	Percentage of countries that have conducted human resource assessments for plans	Percentage of countries that have assessed human resources for plans and reported having sufficient human resources to implement plan*
80	60%	9%	41%	10%

*In the GLAAS 2018/2019 country survey, sufficient financial and human resources were defined as having more than 75% of what is needed to implement national WASH plans.

Source: GLAAS 2018/2019 country survey.

Similarly, a 2018 WHO survey of 88 countries that assessed national programmes for IPC in health care facilities found that national guidelines for hand hygiene as an IPC measure existed in almost 90 per cent of countries, while 62 per cent had overall IPC programmes.⁵⁷ Hand hygiene compliance monitoring was a core com-

ponent of IPC in 50 per cent of countries, and monitoring of ABHR consumption in 27 per cent. However, only 36 per cent of countries had an implementation strategy for IPC, 22 per cent evaluated compliance with their guidelines, and just 26 per cent had a dedicated budget.



4.2

National targets for hygiene

National targets indicate the ambitions of governments. In the GLAAS 2018/2019 cycle, 59 per cent of reporting countries reported that they had set national targets for hygiene (see Table 3). Some of these targets related to handwashing facilities on premises with soap and water, aligned

with the SDG indicator. Fewer countries reported hygiene targets than reported having policies that address hygiene promotion, which may be because the definition of hygiene in some national policies and plans is broad, and does not lend itself to specific coverage targets.

TABLE 3 National hygiene coverage targets and alignment with SDG 6

CATEGORY	TARGET CLASSIFICATION CRITERIA	EXAMPLES OF NATIONAL STANDARDS AND INDICATORS USED TO MONITOR NATIONAL TARGETS	NUMBER OF COUNTRIES (PERCENTAGE) N=93
Basic	The target calls for handwashing facilities on premises with soap and water.	Nigeria: Percentage of population with handwashing facilities with soap on premises.	38 (41%)
Other	The target calls for other types of hygiene targets, such as those specific to WASH in schools, health care facilities, food service, hygiene promotion or hygiene practices.	Jamaica: Percentage of food handling establishments that should have handwashing facilities, including soap and running water. Pakistan: Percentage of population having access to health and hygiene promotion activities. Togo: Percentage of population washing their hands with soap at critical moments.	17 (18%)
None	Countries that do not have a national coverage target for hygiene.		38 (41%)

Source: GLAAS 2018/2019 country survey.

Of the 38 countries that reported having basic hygiene targets for handwashing facilities on premises with soap, only nine could provide data on current coverage for this target. In comparison, nearly half of countries could report progress on urban drinking water and sanitation targets.

Ninety-six countries identified one or more lead institutions for the governance and regulation of hygiene. Of those 96 countries, 90 per cent named the ministry of health as a lead institution. Other lead institutions included the Ministry of Sanitation and Water Resources in Ghana, the Ministry of Human Capacities in Hungary, and the Ministry of Education in Maldives.



© UNICEF/UNI1369701/Nzaramba

4.3

The cost of achieving universal hand hygiene

There are multiple ways that hand hygiene can be funded, drawing on the resources of households, governments, the private sector and development partners. The cost of handwashing promotion is most likely to be borne by governments or aid agencies. This includes initial investment in evidence-based, context-specific intervention design (from the development of behaviour change messaging to delivery mechanisms and approaches), implementation,

and periodic 'top-up' promotional activities to reinforce messaging and ensure sustained behaviours. For private health care facilities and schools, promotion costs will likely be borne by the facility or school itself. In terms of the costs of facilities for handwashing, these are likely to be borne either by the household or, in institutional settings, by the health care facility or school (with government funding for public facilities, or private funding if not).

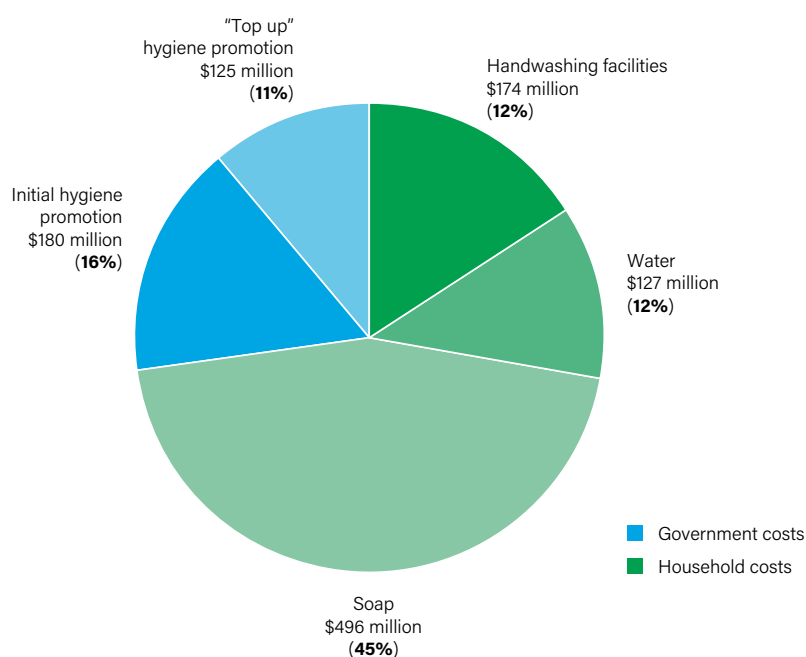
The cost of achieving hand hygiene can be estimated by examining the many possible interventions to support it, broadly categorized as: 1) provision of handwashing facilities; and 2) promotion of behaviours. These vary across settings, such as households, schools and health care facilities. There are both capital, one-off costs and recurring maintenance costs associated with hand hygiene.

In August 2021, WHO and UNICEF published a study that estimated the cost of hand hygiene for all in household settings in 46 of the least-developed countries of the world.⁵⁸ In these countries, it was estimated that achieving universal hand hygiene by 2030 in all domestic settings would cost US\$11 billion, averaging just over US\$1 billion a year. This estimate assumes that households would bear the cost of installing handwashing facilities (purpose-built bucket with tap and stand in the base case), and the cost

associated with the purchase of water and soap. Governments would bear the cost of hygiene promotion (both initial and 'top-up'). The cost modelling assumed that governments have a choice in terms of hygiene promotion methods: they can include group activities, such as community meetings, roadshows and street theatre, and mass media, such as radio, television and social media. In addition, one-to-one promotion, for instance through house-to-house visits, can be added if more intensive interventions are deemed advisable; these interventions have been shown to be highly effective.⁵⁹ However, one-to-one promotion adds considerable costs, so the estimates presented below do not include this intervention. Figure 19 shows the estimated annual cost to provide basic hygiene services to all households in 46 least-developed countries (costs borne by government in blue, and the costs borne by households in green).

FIGURE 19 Estimated annual cost of providing hand hygiene in all households in 46 least-developed countries, (US\$)

The cost to reach universal access to hand hygiene in 46 of the world's least-developed countries by 2030 is estimated to be US\$11 billion, with households contributing 73% of the total



Source: Ross, I., et al., Costs of hand hygiene for all in household settings - estimating the price tag for the 46 least-developed countries, forthcoming.

The costs to government for initial and top-up promotion are estimated to be equal to US\$0.25 per capita per year in the 46 countries. It can reasonably be assumed that the health budget should absorb much of this cost (though other budgets, such as those for water and sanitation, might also contribute). Comparing the cost to the median government health expenditure in the world's least-developed countries, which was US\$9.97 per capita per year in 2018, reveals that, on average, **the annual cost to governments of ensuring basic hand hygiene at home is equivalent to 2.5 per cent of the median government health expenditure.**⁶⁰

While governments would be expected to contribute 27 per cent of the cost of achieving universal hand hygiene at home, more than two-and-a-half times this amount would be invested by households, comprising the remaining 73 per cent. **Government expenditure in hand hygiene promotion will heavily leverage investments by households.**

The costs borne by households would consist of an initial investment in a hand-

washing facility, expected to last five years, at a median cost of US\$17 for a purpose-built bucket with tap and stand, and annual costs of US\$17 for soap and US\$5 for water. More basic facilities, such as a simple jug and bowl, impose a median cost of US\$1.20.

These investments would be affordable for many households, as handwashing facilities can be very simple, and efforts are being made globally to ensure the widespread availability of low-cost soap (see Box 6). A 2009 review of research in 11 countries found that the availability of soap was high among households surveyed. Over 95 per cent of households reported the presence of soap, though in many cases, this was unperfumed laundry bar soap. Toilet soap was rarer and carefully conserved. The review concluded: "Though people cite the cost of water and soap as a problem, in fact, almost all people had soap and water available in their households, and handwashing with soap does not utilize very much of either resource. One route to behaviour change might be to demonstrate how little soap and water are needed for effective handwashing."⁶¹



Ensuring the availability of affordable soap and alcohol-based hand rubs

BOX 6

The private sector is a key partner in ensuring that soap is available at all price points. Large soap manufacturers have widespread reach and scale. Unilever's soap brand Lifebuoy, for example, is sold in more than 60 countries. Lifebuoy brand includes a range of bar soaps that are among the most affordably priced in the company's portfolio, and are aimed at low-income consumers. For instance, in India, Lifebuoy's bar soaps are priced at 20 per cent less than the average price of other mass-market brands, and offered at prices as low as INR 5 and INR 10, which are the lowest currency denominations (equivalent to approximately US\$0.07 and US\$0.14, respectively). Unilever has also experimented with small bar sizes to facilitate affordability; in India, some are as small as 25 grams. Unilever's stated intention is to encourage first-time soap users, who are often low-income consumers.⁶²

There is also a role for small-scale, local producers. For instance, in Mali, the international non-governmental organization WaterAid worked with the Government of Mali to support local women's groups to produce affordable soap, both for their own use, and to sell. WaterAid provided training in soap production, marketing, and small business skills for youth and women groups and helped them access microcredit. The soap is sold in communities, health centres and schools at affordable prices (as little as US\$0.10 a bar).

A more unusual and direct approach to soap availability and affordability was taken in Bu-

rundi. In response to the COVID-19 pandemic, UNICEF and partners launched a massive communication campaign promoting handwashing with soap. However, uptake was limited by the fact that over half of the population in Burundi lives on less than US\$0.90 per day, and the cost of a standard bar of soap was US\$0.16. UNICEF approached the largest soap manufacturer and reached an agreement: the company would reduce their profit margin, and UNICEF would further subsidize production, cutting the price of soap in half. The company would use its distribution system to make the distinctive blue soap, with the price stamped into it, available all over the country. By September 2020, over 20 million bars had been sold. It should be noted that this approach is not without risks: the subsidy may not be financially sustainable in the long term, and in the meantime, it can discourage new market entrants and force existing private sector suppliers to leave the market.

Support is also available for those in need of affordable ABHR. WHO includes instructions for local preparation of hand rubs, using readily available components, in its *Guidelines on Hand Hygiene in Health Care*.⁶³ In Uganda, CDC and IRC WASH supported a local partner, the Infectious Diseases Institute, to assist health care facilities to produce their own low-cost ABHR. The cost was cut by almost in half at first, and even more when ABHR prices rose dramatically as a result of the COVID-19 pandemic.⁶⁴

Previous estimates of the cost of achieving universal coverage of basic WASH services in the health facilities of these 46 least-developed countries are US\$8.1 billion over 10 years, of which facilities for hand hygiene represents approximately 10 per cent, or US\$80 million a year. The needs are greatest for non-hospital facilities and in rural areas. Going forward, it should be possible to gather cost information from health care facilities via

costing tools linked to a global IPC portal maintained by WHO. To assist health care facilities to estimate costs, in 2021 WHO launched a document that describes the resource considerations for investing in hand hygiene in health care settings.⁶⁵ It details the inputs, such as equipment, supplies and activities, required to implement and sustain a comprehensive hand hygiene programme, and assists users to estimate the investments needed.

Government investment in behaviour change: The example of tobacco use

BOX 7

Health care expenditures due to tobacco-attributable diseases are billions of dollars globally. These costs are even higher if lost productivity is taken into account. Almost 40 per cent of these costs are incurred in low- and middle-income countries.⁶⁶ Reducing tobacco use, therefore, translates into large savings for countries. For this reason, many countries invest in behavioural interventions for tobacco cessation and mass media campaigns aimed at reducing tobacco use.

Behavioural interventions for tobacco cessation are generally low-cost, and can include brief advice from health professionals as part of their routine consultations, and behaviour support aimed at helping people to quit tobacco use. In 2019, WHO reported that 73 countries globally have a national tobacco cessation strategy, and 50 countries regularly train primary care providers in brief advice, integrated into primary care disease prevention and control. There is strong evidence that mass media campaigns increase the number of 'quit at-

tempts', lower youth initiation rates and reduce second-hand smoke exposure. Almost one quarter of the world's population lives in a country where the government has invested in at least one national comprehensive anti-tobacco mass media campaign between 2016 and 2018.⁶⁷

It is not uncommon for governments to complement investing in behaviour change with regulation and enforcement. For example, in the 1980s, mass media advertising in the United States of America promoted wearing seat belts in cars. In addition, state governments started enforcing mandatory seat belt laws. This position was widely unpopular, but the data were overwhelming – seat belts reduce the risk of fatality to front-seat passengers by 45 per cent.⁶⁸ In 1985, New York state became the first to enforce a mandatory seat belt law with a fine, and seat belt compliance jumped 70 per cent in less than a year. Today, 49 of 50 states require seat belts, and compliance is 90 per cent.⁶⁹

4.4

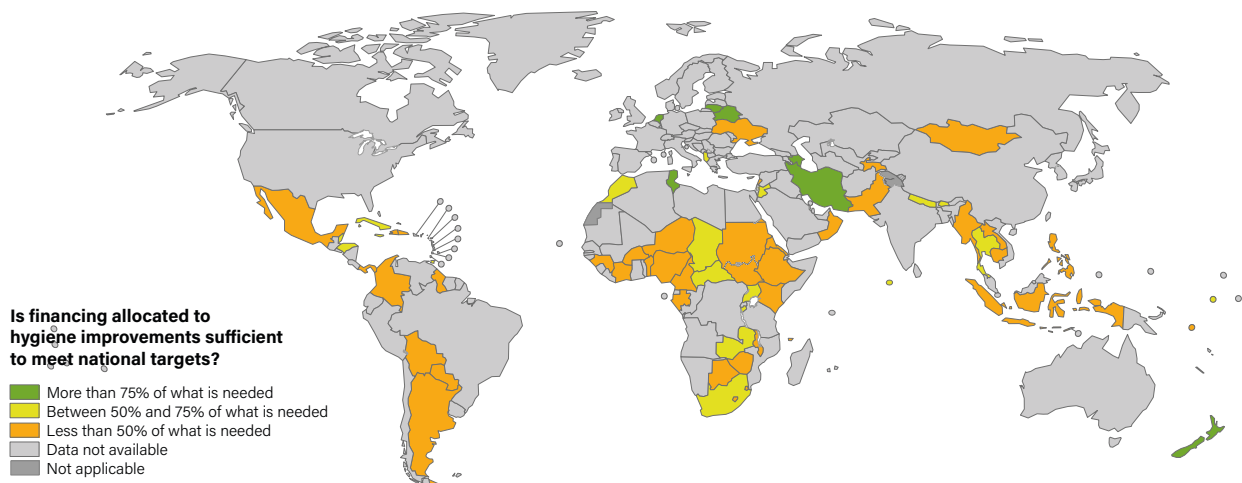
Current investment levels and sources of funding

Sixty-seven countries provided estimates of whether funding from all sources allocated to hygiene was sufficient to reach national hygiene targets. Only a very few

reported that more than 75 per cent of what was needed to reach these targets was available (see Figure 20).

FIGURE 20 Sufficiency of financial resources allocated to hygiene to meet national targets

A majority of countries report that they do not have sufficient funding to reach national hygiene targets



Source: GLAAS 2018/2019 country survey.

Expenditure from all sources

Tracking and monitoring WASH expenditures presents challenges due to the fragmented nature of the sector. Hygiene expenditures are particularly hard to track due to differences in defining hygiene. In the GLAAS 2018/2019 cycle, 54 out of 115 countries provided WASH expenditure data. The survey asked countries to report hygiene expenditures from households, government, external sources and repayable financing. However, only 16 countries

could provide comparable estimates of hygiene expenditures (Albania, Burkina Faso, Bangladesh, Bhutan, Botswana, Colombia, Gabon, Georgia, Guinea, Kyrgyzstan, Mali, Nepal, Senegal, Serbia, Togo and Tunisia). These countries reported US\$960 million in hygiene expenditures from all sources, comprising 12 per cent of their total WASH expenditures.

Eight of the 16 countries indicated only one source of funding for hygiene, either government, households, or donors, highlighting the lack of comprehensive hygiene expenditure data.



Tracking hygiene expenditure through WASH accounts in Mali

BOX 8

WHO supports countries to develop 'WASH accounts' using the TrackFin methodology, which facilitates the collection and mapping of financial flows in a comprehensive, comparable manner. However, monitoring hygiene expenditure can be difficult due to broad and variable definitions. Results show that countries often have very little financial data on hygiene, and that collecting what data are available is problematic. Despite this, some governments are rising to the challenge and

have started to include hygiene in their WASH accounts. For instance, Mali has completed three cycles of WASH accounts, and the results on water and sanitation have been used successfully to advocate for greater budget allocations. This experience highlighted the utility and the power of WASH accounts. Hygiene has been included in the past two cycles, and the Government of Mali plans to continue to include hygiene in future WASH accounts cycles (and improve the data).

Government expenditure

Government budgets for hygiene are available for 18 of the 60 countries that provided details of their government WASH budgets in the GLAAS 2018/2019 country survey (Azerbaijan, Bangladesh, Bhutan, Burkina Faso, Burundi, Côte d'Ivoire, the Democratic Republic of the Congo, Eswatini, Gabon, Guinea, Jordan, the Lao People's Democratic Republic, Mali, Nepal, Senegal, Serbia, Togo and Tunisia). For these 18 countries, the total budget for hygiene programmes and facilities ranged widely, from less than US\$0.01 per capita in Burundi, to US\$5.25 per capita in Serbia. Due to the broad definition of

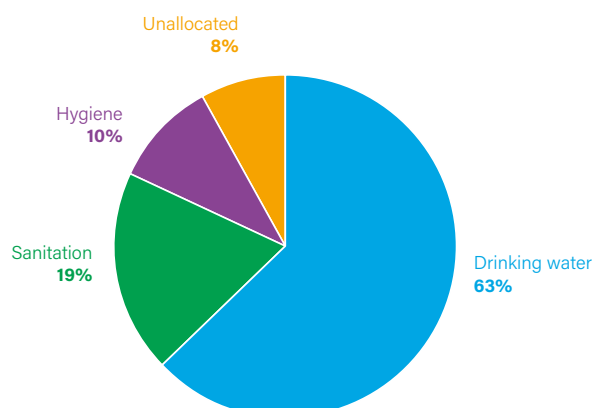
hygiene and available data, there is no way to know how much of those budgets are allocated to hand hygiene. However, all 18 countries have hygiene policies that address hand hygiene. Of the countries that were able to provide disaggregated budget data by ministry, the ministry of health was the most common ministry to have a budget for hygiene.

Fourteen countries provided government expenditure data that provided insights into government spending on hygiene. In these countries, hygiene expenditure is relatively low compared to overall WASH expenditure, totalling approximately 10 per cent of spending (see Figure 21).

FIGURE 21

Government spending on hygiene compared to drinking water and sanitation, 14 countries, (%)

Despite outsized impacts, only 10% of WASH expenditure by governments is on hygiene



Source: GLAAS 2018/2019 country survey.

Household expenditure

Only five countries participating in the GLAAS 2018/2019 country survey were able to report comparable household expenditures on hygiene. In those countries, the percentage spent on hygiene ranged from 11 to 74 per cent of the total that households spent on WASH. This range is due to the broad definition of household hygiene spending, including expenditures that go beyond handwashing. For example, Kyrgyzstan defined hygiene spending as funds that households spend on handwashing, the purchase of soap, washing powder and other detergents, the cost of washing clothes, and maintaining family and household

hygiene. Efforts are being made to progressively fill data gaps in the next cycle of data collection.

External support

External support agencies (ESAs) also play a role in funding hygiene, and in the GLAAS 2018/2019 ESA survey, 11 ESAs noted that hygiene was a high priority. However, data on aid commitments and disbursements for hygiene are lacking. In the survey, only two ESAs provided data on aid flows for hygiene, and those data were partial. OECD tracks aid funding through its creditor reporting system, but it does not clearly track aid for hygiene.





© UNICEF/UNI349558/Nijimbere

Imagining a better future: A dramatic acceleration in progress requires work on many fronts

-
- 5.1. The COVID-19 pandemic is an inflection point
 - 5.2. Countries are rising to the challenge
-



© UNICEF/UNI38354/Arcos

5.1

The COVID-19 pandemic is an inflection point

The COVID-19 pandemic has brought unprecedented attention to hand hygiene. While it is not the only way to prevent COVID-19, and other behaviours, such as masking and physical distancing, are needed, the pandemic has shone a light on hand hygiene as an inexpensive, widely applicable protection measure. Hand hygiene has thus been at the forefront of many countries' response.

COVID-19 response efforts and strategies have created an unprecedented-

ed moment in time for hand hygiene.

There has been intense interest in hand hygiene as a frontline tactic for getting countries 'back to normal' and economies 'back on track'. There has been high-level ministerial support and action to increase hygiene capacity, monitor behaviours and mainstream them. Importantly, there are aspirations to sustain behaviours beyond the pandemic, as **hand hygiene is a 'no-regrets' investment that prevents a multitude of diarrhoeal and respiratory diseases.**

Globally, significant progress has been made in hand hygiene since the pandemic began, including strengthened policies and increased investment. These efforts ultimately improved hygiene behaviours and facilities, protecting millions of people from respiratory and diarrhoeal diseases. Some efforts were more successful than others. Where there was success, it was in large part due to investments made long before the pandemic, proving that investing in WASH systems pays off when a crisis occurs.

At the same time, the opportunity of the pandemic to achieve a step change in hand hygiene uptake has revealed the considerable obstacles that remain. Programming to promote handwashing with soap has evolved significantly, showing promise in addressing some of the core challenges of sustaining behaviours and engaging more stakeholders in mainstreaming behaviours and services. However, progress has been hampered by limited national policies, disruptions to global and national supply chains, insufficient monitoring and evaluation, and inadequate investment in critical infrastructure, in particular convenient, reliable water supply.

The COVID-19 pandemic has revealed trends in behaviours typically seen in past epidemics, namely that behaviours increase with the immediate fear of illness but then decrease over time (rarely have recent epidemics risen to the status of a pandemic). The practice of handwashing with soap often increases during epidemics due to the fear and increased awareness of the practice to prevent transmission – but then the practice wanes with time and is difficult to sustain. A COVID-19 data dashboard maintained by Johns Hopkins University shows declines in the rates of handwashing in most countries between July

2020 and March 2021.⁷⁰ In hospital settings in the United States of America, hand hygiene compliance rates reached near 100 per cent during the early peak of the COVID outbreak and went back to pre-COVID rates by September 2020.⁷¹

The unanticipated length of the COVID pandemic has provided an opportunity for investments to be made and strategies to be established over a longer term. It has underlined the importance of being vigilant and not letting behaviours wane, especially given the threat of new variants and the untested nature of new vaccines. Nonetheless, with the attention shifting to vaccination, there is the fear that the priority given to hygiene will again diminish, putting the majority of energy and resources into the procurement of vaccines at the expense of relatively inexpensive measures such as handwashing with soap and the use of ABHRs. Similar patterns have been seen globally with cholera and polio – faecal-oral diseases, for which basic investments in WASH would have yielded significant returns. However, historically, vaccine introduction has crowded out these complementary solutions.

Increased hand hygiene prompted by the pandemic could potentially have positive long-term impacts on child mortality and morbidity, but this depends on how we use this moment of opportunity to make solid gains. There is much to be done on several fronts, including sustaining behaviours, increasing access to hand hygiene facilities and improving the policy environment.

The time to accelerate progress on hand hygiene is now – before the next health crisis is upon us. The challenge is to find the best ways to leverage the increased attention from both individuals and governments into long-lasting change.



© UNICEF/UNI189548

5.2

Countries are rising to the challenge

As countries have embraced hygiene as a frontline pandemic strategy, they have encountered three main challenges: improving service coverage and compliance in multiple settings; sustaining behaviours in the long term; and establishing an enabling policy framework.

Over the last few decades, there has been a significant evolution in approaches to behaviour change, ways of monitoring behaviour, the engagement of the private sector to innovate to stimulate demand and supply, and policies reflecting

the need for institutional accountabilities and funded mandates. COVID-19 further prompted investments on all these fronts and took the global community one step further in making handwashing 'everyone's business.'

Globally, the COVID-19 pandemic required all actors to address the challenges of hand hygiene services delivery. New collaborative initiatives have emerged, including:

- The **Hand Hygiene for All (HH4A)** initiative, launched by UNICEF and

WHO, with members including the International Committee of the Red Cross (ICRC), ILO, UNHCR, WaterAid, the World Bank, and partnerships such as the COVID-19 Hygiene Hub, Sanitation and Water for All, the Global Handwashing Partnership and the World Economic Forum. Through this initiative, nearly 40 governments have been supported to date to develop fully-costed roadmaps for universal hygiene coverage.⁷²

- The **Hand Hygiene Behaviour Change Coalition (HBCC)**, a public-private coalition established in response to the COVID-19 pandemic by Unilever and the Government of the United Kingdom, which has reached over 1 billion people with hygiene products, infrastructure and education.
- The **Hand Hygiene Market Accelerator (HHMA)**, a private sector initiative launched by the World Economic Forum and UNICEF with the aim of supporting the creation of new and vibrant local markets to trigger supply and demand for affordable, accessible and desirable handwashing solutions.
- Other **Hand Hygiene 'Accelerator'** initiatives, which aim to nurture new businesses that fill service gaps, tapping into the private sector's unique ability to mobilize research and development to provide innovations and deliver new solutions. For instance, the Duke University-UNICEF Innovation Accelerator, housed at Duke University, was established to help social entrepreneurs acquire the knowledge, tools and networks necessary to improve the lives of children around the world.

- An initiative to understand evidence gaps and chart an **internationally-agreed research agenda**, jointly coordinated by the London School of Hygiene and Tropical Medicine, WHO and UNICEF, bringing together research, policy and practitioner communities.

Several countries stand out in terms of their focus on hand hygiene as an issue of national importance. In October 2020, **Bangladesh** was one of the first countries to accelerate the development of a national hygiene roadmap, providing an opportunity to establish policy measures that address the needs of marginalized populations, while responding to both short- and long-term needs for hand hygiene as a pillar of public health. The roadmap addresses gender inequalities, the inclusion of people with disabilities and climate change adaptation. The roadmap also highlights the need for a linked national menstrual hygiene management strategy. Although the government had an effective platform for coordinating the roadmap process, it required active civil society engagement. WaterAid supported a process to convene civil society organizations (CSOs), the private sector and government. This enhanced the coordination of the roadmap process across sectors, ensured the participation of vulnerable groups, and increased the likelihood that decision-makers will be held to account for their commitments.

In the **Philippines**, existing programmes to support handwashing with soap provided a foundation for the response during the COVID-19 pandemic, with the national government providing local authorities with a 'playbook' based on proven approaches (see Box 9).

Accelerating progress on hand hygiene through local government in the Philippines

BOX 9

In 2019, the Department of Education in the Philippines started working to increase handwashing with soap among schoolchildren. The department tested low-cost behavioural nudges, such as painted footprints from toilets to the handwashing area, simple visual handwashing messages in toilet stalls, a 'watching eye' sticker above the water source, and a sticker pointing to a soap dish by the handwashing area. The nudges increased handwashing rates among students by 17 percentage points four months after initial implementation.⁷³

The onset of COVID-19 prompted unprecedented cooperation and collaboration among all government departments in the Philippines. The President declared a State of Public Health Emergency throughout the country in March 2020. The Department of Health issued an Administrative Order in April 2020 outlining public health strategies, including handwashing. The department also developed a 'Health Promotion Playbook' for local government, a simple, comprehensive guideline that addresses the provision of handwashing facilities and promotion of behaviour change. The playbook encompasses all populations and

settings, including schools, workplaces, markets, restaurants, temporary shelters and public spaces, and provides detailed guidance on accountabilities, monitoring and budgets. Critically, the play-book provides simple guidance for implementing behavioural nudges, building on the programme established before the pandemic struck. The play-book includes templates for municipal ordinances, called 'Hygiene Behavioural Nudges Ordinances,' which were designed to support activities such as handwashing awareness campaigns, practical demonstrations, or distribution of free hygiene kits, and institutionalized the provision of handwashing facilities and the installation of nudges, including stipulating penalties for non-compliance. The department issued a memorandum to encourage local governments to use the guidance, including issuing these ordinances.

While COVID-19 precipitated the playbook, COVID-19 does not appear prominently within the guidance materials. The mainstreaming of the nudges approach into education policies and municipal ordinances signals the anticipation that it will be continued after the pandemic ends.



In **Zambia**, the national government, supported by WaterAid, has developed and scaled up a national hygiene promotion programme using a range of delivery mechanisms across varied settings (see Box 10).

Hygiene promotion at scale in Zambia

BOX 10

In Zambia, the government is rolling out the Kutuba Campaign, an innovative, inclusive and highly participatory campaign designed to make practising hygiene behaviours a social norm. The campaign is based on a behaviour-centred design approach, which was developed by a multi-disciplinary creative team supported by WaterAid. Kutuba is comprised of an innovative, inclusive intervention package for schools, health care facilities and communities, which uses positive motivational drivers and interactive activities. The campaign is being delivered by Zambia's Ministry of Health, supported by other line ministries and stakeholders, and has been implemented in seven districts to date. The first phase focused on mass media, digital media and social media campaigns, and the installation of several

hundred handwashing facilities in key locations, increasing access to hand hygiene in public places and health care facilities. Celebrities, musicians and influencers took part to promote handwashing behaviours and change social norms. In response to the COVID-19 pandemic, additional behaviours were added. The second phase focuses on ramping up Kutuba community activities, focusing on sustained behaviour change through interpersonal and community events, while continuing the digital and mass media campaign. To date, almost 14 million people have been reached, and according to a rapid assessment conducted by WaterAid in late 2020, 99 per cent of people assessed reported hearing or seeing hygiene promotional material, and 87 per cent reported increasing their handwashing behaviour as a result.

In **Indonesia**, hand hygiene was propelled into the national spotlight during the COVID pandemic as a frontline strategy for prevention. This meant increasing handwashing in public places, which became part of the strategy to keep the economy open (see Box 11).

Focusing on hand hygiene in public places in Indonesia

BOX 11

Indonesia adopted a pandemic response strategy based on partial shutdown. While schools and offices closed, malls and businesses remained open, with hygiene protocols for handwashing with soap, mask usage and physical distancing (known collectively as "3M" as these terms all start with M in Indonesian) in all public places. The hygiene strategy was designed to keep the economy moving with minimal disruption by systematically 'normalizing' hygiene behaviours as people went about their day-to-day business. Unique to the 3M behavioural approach was its application to public places. However, baseline data collected in December 2020 showed that handwashing practice was low in many public

settings, with only 14 per cent of people observed to wash their hands; in many cases, the lack of handwashing infrastructure was the limiting factor. For instance, the reopening of schools was based on the ability to practise 3M, a stumbling block as more than half of schools did not have functioning WASH facilities. By March 2021, handwashing in public places where facilities were available had increased from 45 to 76 per cent. However, overall, handwashing in public places had increased to only 26 per cent, in part because during the same period, the availability of functional handwashing facilities had decreased from 42 to 31 per cent, most likely due to operation and maintenance challenges.



© UNICEF/UNI337411/Veska

Going forward, it is critical that governments establish clear policy that relates to both service availability that facilitates handwashing, including readily available water, and the behaviours required to ensure hand hygiene is common practice in all relevant settings. This means governments and development partners should:

- Establish national policies, and costed, funded hand hygiene strategies and programmes;
- Invest in infrastructure, including handwashing facilities and water systems that make water readily available for handwashing;
- Improve national and global monitoring and evaluation;
- Consider the role that regulation and enforcement can play in ensuring hand hygiene in certain settings, such as public places, health care facilities and workplaces;
- Strengthen local markets to provide hand hygiene products and services; and
- Coordinate hand hygiene interventions, both nationally and globally.



Governments can accelerate hand hygiene progress with proven, effective approaches

-
- 6.1. Good governance begins with leadership, effective coordination and regulation**

 - 6.2. Smart public finance unlocks effective household and private investment**

 - 6.3. Capacity at all levels drives progress and sustains services**

 - 6.4. Reliable data support better decision-making and stronger accountability**

 - 6.5. Innovation leads to better approaches and meets emerging challenges**

 - 6.6. Looking ahead: A pathway to 2030**

The **SDG 6 Global Acceleration Framework**, coordinated by UN-Water, has identified five accelerators to support the achievement of SDG 6:

- **Governance:** Make SDG 6 everyone's business through cross-sector and transboundary collaboration, clear roles, stakeholder involvement and effective and inclusive institutions.
- **Financing:** Optimize financing for water and sanitation, particularly for countries and communities with limited access to financial resources.
- **Data and information:** Build trust through data generation, validation, standardization and information exchange for decision-making and accountability.

- **Capacity development:** Focus on inclusive human and institutional capacities at all levels to understand and deliver SDG 6.

- **Innovation:** Leverage and scale-up innovative practices and technologies in schools, health care facilities and other public places, including technologies that are accessible for rural areas and marginalized communities.

The accelerators provide a valuable framework for achieving rapid progress on hand hygiene. This chapter outlines how strategic actions and investments aligned with the five accelerators can allow governments to make rapid progress in scaling up handwashing in homes, schools, health care facilities, workplaces and public places.

6.1

Good governance begins with leadership, effective coordination and regulation

Governments should establish clear policy that relates to both service availability that facilitates handwashing, including readily available water, and the behaviours required to ensure hand hygiene is common practice in all relevant settings. Good governance begins with leadership that prioritizes and champions hand hygiene in all settings. This can be from a head of state, minister or another senior political figure ready to assume the challenge of driving progress. Local leadership is equally im-

portant. States, districts or villages also need to be committed. All levels of government should be clear that hand hygiene is a crucial public policy issue, and progress requires targets, strategies, roadmaps and budgets.

In **South Africa**, a handwashing policy, developed in 2015, clearly spelt out the roles of government institutions in promoting handwashing and providing services, and was instrumental in enabling the country to seamlessly mount a large-scale COVID-19 response effort (see Box 12).

South Africa: Developing and using a national hand hygiene policy

BOX 12

In 2015, UNICEF supported the Government of South Africa to assess hand hygiene in the country using a tailor-made bottleneck analysis tool. This exercise brought together a number of ministries involved in water and sanitation provision, education, health and environment to discuss handwashing strategies and how to unpack institutional responsibilities. Based on the results, a national five-year strategy for hand hygiene was developed that had, at its core, the establishment of ministerial accountabilities for the widespread adoption of handwashing with soap. The strategy brought together three key

ministries: water and sanitation, health and education. It triggered the creation of capacity at national and local government levels, with personnel from municipalities working alongside ministry staff to promote handwashing in households, schools and health care facilities. These early efforts bore fruit during the COVID crisis, when they contributed to the rapid development of a national COVID strategy that engaged multiple ministries, with clear roles and mandates. The government is now seeking to develop a further five-year strategy that will expand the mandate into other areas, such as food hygiene.

In **Nigeria**, several ministries and levels of government came together to develop a national strategy for hygiene promotion (see Box 13).

Taking an all-of-government approach to hygiene in Nigeria

BOX 13

The Federal Ministry of Water Resources in Nigeria, with the support of UNICEF, undertook a process to develop a National Strategy for Hygiene Promotion, led by the Department of Water Quality and Sanitation. Research, including field visits, was carried out to determine the approaches to be adopted across the country by both government agencies and NGOs in each state. Once a draft strategy was developed, the ministry called a meeting of stakeholders from the ministries of health, education, environment, and women's affairs and social development at both federal and state levels. At the national level, the National Primary Health Care Development Agency, the Universal Basic Education Commission and the Environmental Health Officers Council of Nigeria were also invited. At the sub-national level, the states' rural water supply and sanitation agencies and universal basic education boards participated. The inputs of these stakeholders were reflected in the final version of the strategy.

Guidelines were developed for: 1) hygiene promotion in communities and local markets, focused on households and working through communi-

ty-based volunteer hygiene promoters; 2) hygiene promotion in schools, working with teachers and pupils; and 3) hygiene promotion in health care facilities, working with health care workers. The strategy was duly endorsed by the ministers of water resources and education, the Executive Director of the National Primary Health Care Development Agency, and the Director of Water Quality and Sanitation.

As a result, when the country was struck by COVID-19, handwashing at critical times was already a top priority, as articulated in the strategy, and Nigeria had a cohort of volunteer hygiene promoters trained in demonstrating effective handwashing and group counselling. UNICEF is now supporting the government to conduct a market assessment of hygiene products and services, and to develop a roadmap based on the strategy that will define the roles and responsibilities of stakeholders, set milestones towards achieving hand hygiene for all, including a resource mobilization strategy and establish budgeting for the common items required for hand hygiene.

In **Pakistan**, not only has hygiene been incorporated into a national programme with other key issues that are important to the country's future, but it is championed by the head of state (see Box 14).

Hand hygiene as part of Clean Green Pakistan

BOX 14

Clean Green Pakistan is a flagship five-year campaign of the Prime Minister of Pakistan. As well as water, waste management, sanitation, and tree planting, one of its pillars is hygiene, and there is strong political will and leadership to inspire nationwide hand hygiene behaviour change. During the COVID-19 pandemic, the need for high-impact hand hygiene programming, which had already been identified through government surveys, became more critical. With major progress made in water and sanitation infrastructure at the provincial level during last the decade, a national push was required to mainstream hygiene in general, and hand hygiene in particular. Public sector planners and policymakers took note. With major pub-

lic sector investment, and leveraged donor and private sector funding, hand hygiene programming is becoming a national social movement.

The federal Ministry of Climate Change has, with support from UNICEF, WaterAid and other partners, developed a 'Hand Hygiene for All' roadmap in support of reaching the hygiene goals of Clean Green Pakistan by 2030. The roadmap links the long-term vision of the government, including a national behaviour change communication strategy, with WASH policies, plans and programmes, and encourages a broad variety of stakeholders to participate, contribute and leverage mutual strengths.

In **Nepal**, the government has integrated hygiene promotion with immunization, and achieved coordination between two important sectors nationwide (see Box 15).

Integrating hygiene and immunization programming in Nepal

BOX 15

In Nepal, the Ministry of Health and Population developed an approach that integrates hygiene behaviour promotion into the existing national routine immunization programme. A new mother takes her baby to an immunization clinic at least five times in the first nine months of the child's life, providing an excellent point of contact where health workers, including female community health volunteers, can promote good hygiene behaviours that will improve the

health of children and their families. By embedding hygiene behaviour change in Nepal's routine immunization programme, the way the hygiene and public health sectors work together is being revolutionized, with mutual benefits for both hygiene and immunization. With financial and technical support from WaterAid, the Ministry of Health and Population has gone from a pilot in 4 districts to working in all 77 districts of the country.



© UNICEF/UNI388378/Arcos

6.2

Smart public finance unlocks effective household and private investment

As described in Section 4.3, the cost of hand hygiene can be shared, with households paying a significant part. **Government spending on hand hygiene promotion and education both catalyses and optimizes household investment.** Governments should also invest in hand hygiene in schools and health care facilities, set clear rules for these facilities, and regulate businesses so that hand hygiene is ensured. Governments have an important role to play in ensuring that water supply systems provide easily available water in quantities that facilitate handwashing. **Governments should seek ways to ensure public spending has the maximum impact possible and stimulates investments from households and the private sector.**

The COVID-19 pandemic has been an opportunity to earmark emergency financing for handwashing. For instance, at the beginning of the pandemic, the World Bank launched the COVID-19 Strategic Preparedness and Response Program to fast-track financing for the pandemic response. As of March 2021, out of 99 projects approved, two-thirds included activities on hygiene and handwashing promotion, both at the community level and in health care facilities. For example, in the Lao People's Democratic Republic, the COVID-19 response plan included significant investment in handwashing facilities in health care facilities (see Box 16).

Mobilizing COVID-19 funding for hand hygiene in the Lao People's Democratic Republic

BOX 16

In the Lao People's Democratic Republic, the Ministry of the Environment has been supported by WHO to develop a COVID-19 response plan. The ministry has been successful in mobilizing over US\$2 million from the Pandemic Emergency Financing Facility of the World Bank and bilateral donors. These resources will be used for, among other things, improving WASH services in more than 60 health care facilities in six provinces and the capital city of Vientiane. Funding is being used to install handwashing stations at the entrances and in public areas of 40 hospitals, 300 automatic hand-gel dispensers for 50 hospitals, and to provide water tanks and pumps in selected hospitals in water-scarce districts.

In addition, WHO is providing assistance to carry out WASH assessments in health facilities, and training of trainers is being carried out. Partners familiar with WASH are being mapped, so they can be trained to support WASH in health care facilities. A workshop is planned to define baselines, set targets for WASH in health care facilities and develop a roadmap to reach national and SDG targets in 2025 and 2030. The investments made in response to the COVID-19 pandemic are thus likely to have long-term benefits.

Even before the COVID-19 pandemic, governments could access financing for hand hygiene through development bank loans. The World Bank has included handwashing in numerous projects, for instance:

- In Vietnam, the World Bank supports government efforts to achieve 'commune wide sanitation,' which includes the adoption of handwashing. The project provides results-based incentives for better handwashing infrastructure and behaviour in households, schools and health care facilities, and has reached 1.3 million people and almost 2,000 schools and health care facilities with behaviour change communication and handwashing messages. The results-based structure of the programme means that funds are only disbursed based on credible verification of achievement of commune-wide sanitation. A mid-term evaluation of the programme in 2019 documented a 33-percentage point increase in handwashing with soap in the communes in the project area.

- In Nicaragua, the World Bank supported a water supply and sanitation project focused on rural areas of the country. In addition to financing improved water and sanitation infrastructure, the project supported the government to implement pilot social programmes to raise awareness about the importance of handwashing. The project focused on Indigenous and Afro-Nicaraguan communities, and, to reach as broad an audience as possible, World Bank financing was used to support a range of innovative outreach activities. These included volunteers conducting household visits and providing hygiene training, and the use of community theatre.

Governments can work with partners to support investments made by households. For instance, households who want to build handwashing facilities at home, such as indoor plumbing and washbasins, may be able to obtain small loans. Water.org, an international NGO that supports microfinance for WASH, encourages the microfinance institu-

tions it works with to allow borrowing for handwashing facilities. As the amounts involved are very small, they are often bundled with loans for other WASH facilities, such as latrines or bathrooms. Water.org also facilitates lending to small businesses to help them to install handwashing facilities for clients, and will consider loans to suppliers of handwashing equipment, who in turn can provide options for instalment payments to their customers. Manufacturers of handwashing equipment may also offer financing. For instance, LIXIL, the manufacturer of the SATO Tap is exploring financing options to help customers purchase the taps (see Box 22).

Behaviour change driven by the COVID-19 pandemic represents an opportunity for new entrants into local soap markets. Interviews conducted through a US-AID-supported assessment of the WASH impact of the pandemic in Ghana revealed that the increase in demand for soap has attracted many new market entrants, primarily small- and medium-sized enterprises, who are convinced that the newly adopted handwashing behaviours will be sustained over time, creating a viable long-term business opportunity.⁷⁴ Governments can support such market entry with careful policies on the taxation of hand hygiene products, and a favourable small business regulation environment.



© NICEF/UN0353272

6.3

Capacity at all levels drives progress and sustains services

Capacity is key to ensuring the success of hand hygiene initiatives. There are serious gaps in capacity for the promotion and sustained uptake of hand hygiene, and for many stakeholders this represents uncharted territory. Research into what works in various settings has resulted in critical hand hygiene innovations over the decades. This research is ongoing, and it remains a chal-

lenge for governments and others to keep up with the evolving evidence base to ensure effective implementation of innovation. In many cases, countries need to invest in entirely new skillsets, such as those required to create an enabling policy environment, promote hand hygiene, incentivize the private sector to engage, and regulate and enforce in line with policy.

Capacity needs to be built at all levels, across all settings: both nationally and locally, within governments, the private sector and society as a whole. **Governments should assess current capacity with respect to their hand hygiene policy and strategies, identify gaps and develop capacity-building strategies based on the rigorous application of best practice.**

A regional initiative to build government capacity to develop sanitation policy has been spearheaded by the African Ministers' Council on Water (AMCOW). AMCOW developed the *African Sanitation Policy Guidelines* to provide guidance to African governments on the review, revision and development of sanitation policies and associated implementation strategies (see Box 17).

The African Sanitation Policy Guidelines provide support to governments to include hand hygiene in sanitation policy

BOX 17

Launched in 2020 by AMCOW, the *African Sanitation Policy Guidelines* provide background information and advice on the process of developing sanitation policies, and suggested content. Hygiene is included prominently in the guidelines, and they call on governments to include hygiene in sanitation policies and to play a role in both ensuring the provision of hygiene facilities and improving hygiene behaviours.

The guidelines provide recommendations for drafting policy which include:

- Specifying the minimum service level for handwashing; specifically, that a basic handwashing facility should be the minimum standard, including the availability of a handwashing facility on the premises with soap and water in all settings, but particularly in shared and public toilets, such as in health

care facilities, schools, refugee and internally displaced person camps, other public and private institutions, and commercial settings;

- Specifying mechanisms to promote handwashing with soap, including conducting formative research to inform strategies and implementation plans; and
- Ensuring clear allocation of responsibilities for hygiene behaviour change activities, including coordination of all actors and the forging of partnerships with other ministries, such as health and education, with respect to hygiene in health care facilities and schools.

The guidelines provide a set of sample policy statements related to hand hygiene that governments can use when drafting policy documents, adapting as necessary to reflect the local context.



Some capacity-building initiatives have involved twinning partnerships, such as that between **Timor-Leste** and **Macao** (see Box 18).

In Timor-Leste, a twinning partnership with Macao focused on improvements in health care facilities

BOX 18

WHO's Twinning Partnerships for Improvement created a partnership between government agencies in Timor-Leste and Macao. Using the WHO Hand Hygiene Self-Assessment Framework, the IPC assessment framework and WASH assessments, partners in Timor-Leste were supported to undertake a detailed needs assessment, which identified the key areas of IPC and WASH improvements. Four areas were addressed, including training, infrastructure, establishing IPC and quality teams, and improving hand hygiene. National level commitments, including from the Ministry of Health, were secured. Hand hygiene promotional materials were created and translated into local languages. A training programme and a video were rolled out, and auditing of hand hygiene was promoted. Qualitative

and quantitative data collection from the audits focused on systems issues to understand challenges and barriers. An important objective of the partnership was the training of health workers on the WHO IPC 'core components'. A hand hygiene campaign provided an opportunity to build a knowledge base and practise hand hygiene skills, and 9 out of the 13 municipalities in Timor-Leste were reached.

Considerable improvements were achieved in all areas, including systems change, training and education, monitoring and feedback, communications and reminders, and safety culture. However, WASH services and infrastructure were constraints. For instance, one quarter of facilities reported intermittent water supply.

Capacity is also needed to improve hand hygiene at workplaces, which means building the understanding and competence of employers. Several agencies and

partnerships have provided guidance, including the WASH4Work partnership, the World Business Council for Sustainable Development and ILO (see Box 19).



The International Labour Organization provides guidance to workplaces to ensure hand hygiene

BOX 19

In August 2020, ILO issued a policy brief identifying hand hygiene at the workplace as an essential occupational safety and health prevention and control measure against COVID-19. The brief pointed out that individuals may spend most of their waking hours at work, at risk of infectious exposure not only from other workers, but also from customers and clients. ILO stressed the need for handwashing at workplaces, and quoted the ILO 'Centenary Declaration for the Future of Work', adopted by the International Labour Conference in 2019, that emphasizes that safe and healthy working conditions are fundamental to decent work. It states that "the promotion of a culture of frequent and thorough handwashing, including by providing workers, customers and worksite visitors with places to wash their hands, is essential".

The policy brief urges employers to:

- Promote a culture of frequent and thorough handwashing, including by providing places where workers, customers and worksite visitors can wash their hands.

- Encourage respiratory etiquette, including covering coughs and sneezes.
- Discourage workers from using other workers' phones, desks, offices or other work tools and equipment, when possible.
- Implement regular housekeeping, including routine cleaning and disinfecting of surfaces, equipment and other elements of the work environment.
- Promote a culture of regularly cleaning and disinfecting the surfaces of desks and workstations, door handles, telephones, keyboards and work tools, and regularly disinfect common areas, such as sanitary facilities and elevators.

The brief describes what is necessary in workplaces to allow handwashing, including washbasins, running water, soap and towels or dryers. It includes illustrated guidance on the proper way to wash hands, suitable for posting at workplaces. It explains the key moments at which workers should wash their hands, and where washbasins should be located.

Many institutions that provide capacity-building support have done so through resources provided online. During the COVID-19 pandemic, the creation and use of online content have increased significantly. Examples include:

- **The COVID-19 Hygiene Hub:** Established in April 2020, this free online service helps users in low- and middle-income countries rapidly share, design and adapt evidence-based hygiene interventions to combat COVID-19. Funded by the Government of the United Kingdom and the Bill and Melinda Gates Foundation, the hub brings together governments, international agencies, NGOs and researchers in public health, behaviour change and

implementation science. The platform provides access to a searchable set of resources, which summarizes current evidence and guidelines, creates a platform for sharing what is working, and, at the height of the pandemic, connected institutions and organizations with technical advisors who could answer questions and provide detailed advice in real-time. By June 2021, the Hygiene Hub website had been visited over 130,000 times.⁷⁵

- **WHO online courses:** During the COVID-19 pandemic, the use of open WHO resources has grown exponentially, with hand hygiene and IPC courses continually in the top 10 of those being accessed. In the first quar-

ter of 2021, WHO's course on hand hygiene in health had more than 13,000 enrolments across all languages.

- World Bank Global Hand Hygiene Accelerator:** Launched on Global Handwashing Day in 2020, this platform was designed to bridge existing gaps and bring together the necessary knowledge, resources and tools to improve hygiene interventions in World-Bank-supported projects. Through resources available online to both staff and client governments, the platform connected task teams with experts for technical assistance and advisory services on hand hygiene and behaviour change, shared and disseminated emerging guidance on hand hygiene, and convened partners external to the World Bank to provide insights into best practice.⁷⁶
- WaterAid training modules and MOOC:** In partnership with the London School of Hygiene and Tropical Medicine, WaterAid has developed a hygiene capacity-building training package and modules to operationalize a 'behaviour-centred design' approach for hygiene behaviour change programming. This includes a series of global webinars and a six-week 'massive open online course' (MOOC), supplementing in-person technical training in 21 countries, reaching hundreds of government staff members. During the COVID-19 pandemic, hygiene campaigns developed by staff trained through these interventions were leveraged to include COVID-19 preventive behaviours, and quickly implemented at national and regional scale.

6.4

Reliable data support better decision-making and stronger accountability

While there have been dramatic improvements in the availability of data on hand hygiene in recent years, especially for households, gaps still remain. There are aspects of hand hygiene in health care facilities that are not comprehensively monitored, and little data are available on the availability and affordability of soap.

The lack of data on hand hygiene makes tracking progress problematic, and

makes decisions about policy, programming and investment difficult for governments. **Governments should address the need for consistent data on hand hygiene in order to inform decision-making and make investments strategic.** There are numerous initiatives to expand and improve the data available to decision-makers. WHO and UNICEF, working through JMP and GLAAS, work with governments to im-

prove data collection and analysis. JMP and GLAAS data are updated regularly and are available online. Tools to collect data on hand hygiene in the health care sector are available at an online portal maintained and regularly updated by WHO.⁷⁷ Thanks to guidance provided by the JMP, household surveys increasingly include a standardized handwashing module, which involves direct observation of handwashing facilities.⁷⁸ Enumerators ask to see the place where household members most often wash their

hands and then record the type of facility used and whether water and soap were available at the time of the survey.

In addition to survey data, there are examples of innovation in data collection, such as crowdsourced data on hand hygiene in public places in Indonesia (see Box 20), and data collected by SMS surveys to assess the effects of the pandemic on access to WASH services, including the availability of soap, in Africa (see Box 21).

Monitoring hand hygiene behaviour in public places in Indonesia using mobile phones

BOX 20

Indonesia's COVID-19 monitoring system, developed by the government with support from UNICEF, tracked compliance with the national "3M" mandate to wear masks, socially distance and practice hand hygiene in schools, shopping centres, mosques and transport stations. The system was remarkable in its scale. Initially led by the Office of the President, it engaged the army, CSOs and celebrities, and was administered by volunteers, trained via WhatsApp, using smartphones to collect data. Rather than being paid, volunteers were rewarded with mobile phone credit. The system provided a trustworthy source of data, based on structured observation, rather than less accurate self-reporting. Using mobile phones as data collection devices was particularly suited for scale-up across a large, geographically dispersed country of 17,000 islands. The monitoring was pitched as part of a social movement in which people protected one another by adopting healthy behaviours. The intention was that the monitoring process became an exercise in changing social norms; citizen-led

monitoring would create peer pressure to practise hand hygiene in public places. In fact, it was found that the presence of monitors doubled the rate at which handwashing took place.

In November 2020, over 13,000 observations of handwashing stations in markets, schools, stations, religious places and on public transportation revealed that handwashing with soap or sanitizer was the least practised of the 3M, despite offering the highest benefit of the three behaviours. Overall, only one quarter of people observed practised hand hygiene; considerably lower in some settings. The lack of hand hygiene may be a result of the difficulty in finding handwashing facilities – half of the public places observed were not equipped with a functional handwashing station equipped with water and soap or hand sanitizer. The low baseline levels revealed by the monitoring highlighted the need for hygiene services that could keep pace with the economic growth strategies of the country.

Use of SMS surveys to gather information on handwashing and soap access in Africa

BOX 21

An assessment team was engaged by USAID to examine the impact of the COVID-19 pandemic on access to WASH in six countries in Africa.⁷⁹ The team contracted the mobile-based research firm GeoPoll to conduct SMS surveys of at least 500 respondents per country. SMS surveying is an extraordinarily efficient means of collecting consumer information. GeoPoll was able to access mobile subscriber databases consisting of millions of people in each of the countries, and secure SMS survey responses from a sample with geographic and age distributions representative of the broader population of each country. The survey was designed by the assessment team, and contained modules on employment and migration, water supply, sanitation and handwashing. The survey could be easily read and filled out with a basic phone (i.e., not a smartphone) and was offered in numerous languages specific to each country. The survey consisted of 33 questions, with skip patterns that meant that a respondent typically saw 20 to 25 questions. Respondents were incentivized by a modest offer of top-up credit. Completion rates ranged from 19 per cent in Rwanda to 55 per cent in Senegal.

The team acknowledged that respondents are likely a slightly biased sample given that filling out the survey requires the possession of a charged cell phone and some technical ability. Cell phone

ownership is estimated to be 10 per cent lower among women than among men in low- and middle-income countries. Nonetheless, these biases are considered to be small enough to make SMS surveys extremely useful, given the relative ease of deploying them.

The survey revealed that in two countries, Kenya and Rwanda, a much higher percentage of respondents reported soap access becoming relatively more difficult as a result of COVID-19, while in the other four countries, soap access was reported to become either relatively easier or remain constant. These differences are likely linked to the relatively higher income shocks that Kenyans and Rwandans reported, as the evidence collected during the assessment indicated no increase in soap price trends. The assessment team reported handwashing to be extremely high in the aftermath of the onset of the pandemic. Among over 3,000 respondents to the SMS surveys, 84 per cent reported that handwashing with soap by neighbours and friends had increased due to the pandemic. Based on this, the assessment team reported cautious optimism that the pandemic may have brought about a shift in social norms with respect to handwashing in these countries. Complementary data collected from soap suppliers indicated significant shortages of hand hygiene supplies were not expected in the six countries.



© UNICEF/UNI343278/

6.5

Innovation leads to better approaches and meets emerging challenges

Governments and supporting agencies should encourage innovation, particularly within the private sector to roll out hand hygiene for all, in all settings. New ideas are needed to overcome challenges such as lack of water supply, uneven soap availability and the impediment of affordability.

Recent start-ups, assisted by the Duke University-UNICEF Hand Hygiene Accelerator initiative, focus on increasing access to handwashing with soap in different contexts and for underserved populations. For instance:

- **Eco-Soap Bank** rescues and recycles unusable soap remnants from commercial manufacturers and turns it into new bars, which can be sold for less than existing soap brands.
- During the COVID-19 pandemic, 15.4 million bars of soap were provided to NGOs, schools and health care facilities in Africa and Asia.⁸⁰
- **Tanzania Young Eco Protection** is a youth-led organization that has developed a low-cost, easily-maintained, foot-pedal handwashing station for schools. The ambition is to scale-up by selling to schools through an instalment payment model.
- **Kidame Mart** is Ethiopia's largest last-mile distribution network, empowering 3,000 female entrepreneurs to distribute products to over 1.5 million customers across rural Ethiopia. Rural women are trained as Kidame Mart sales agents and operate as micro-entrepreneurs, providing access

to a wide range of quality, high-volume consumer goods, including soap.

- **Wow Mom** installs innovative and locally designed baby changing stations in public toilets in Kenya's urban centres and offers training on hygiene for caregivers and young children.

The COVID-19 pandemic highlighted an urgent need for low-cost, low-flow hand hygiene facilities that do not require direct access to a water point. The Sato Tap and HappyTap are examples of innovations to address these issues (see Boxes 22 and 23).



© UNICEF/UN0281081/Vishwanathan

Leveraging an existing partnership to innovate for handwashing: The SATO Tap

BOX 22

LIXIL, a Japan-based corporation, already had experience with designing and marketing low-cost SATO toilet products through the LIXIL-UNICEF 'Make a Splash' partnership. LIXIL leveraged this to prioritize hand hygiene product development. It collected user feedback on existing handwashing technologies and developed product prototypes, and UNICEF provided inputs on reaching the most vulnerable and facilitated input from sector partners. The resulting SATO Tap is a household handwashing facility comprised of a plastic base with a nozzle that can be fitted onto widely available plastic water bottles of various sizes, providing a steady but limited flow of water. It features an integrated soap holder, and its design makes it easy for anyone to use, while ensuring low-touch contact. UNICEF and LIXIL carried out rapid trials of the SATO Tap with households and hardware businesses in Bangladesh, Ethiopia, India, Kenya and the United Republic of Tanzania. The tap was found to be superior to existing solutions available to households, and few trial participants were willing to part with it when given the option of a buy-back above the retail price. Based on user feedback, the water flow rate was slightly increased, after which LIXIL began distribut-

ing units. So far, 500,000 are in the production and distribution process, over half of which are reaching households through partnerships with UNICEF country programmes. In the longer term, LIXIL plans to achieve sustainability of the SATO Tap supply by commercializing it, working with local businesses and organizations, who are expected to offer it at a price between US\$3 and US\$6.⁸¹



Source: Twitter/@AMHFarch

Source: LIXIL

A social enterprise responds to the need for innovative portable handwashing facilities: The HappyTap

BOX 23

HappyTap is a social enterprise with the mission to advance a 'new normal' in hygiene: that handwashing is possible wherever it is needed. With support from development partners and venture funds, HappyTap utilized an iterative, human-centred design approach to create a portable handwashing facility that can easily be placed in convenient locations. The unit has a water reservoir, tap and small sink, and has an appealing design that serves as a physical reminder to nudge behaviour. Early consumer research in rural Vietnam found that households would be willing to pay for such a handwashing station if it was attractive and practical.

Within the first three years of commercial sales, more than 10,000 HappyTaps were sold at full market price. A study in 2019 found that households in Vietnam with a HappyTap were more likely to wash their hands correctly and at key times compared to households with other handwashing facilities, and that children were the primary users. Production was scaled up, and the business expanded from Vietnam to Cambodia and Bangladesh.

In response to COVID-19, HappyTaps have been used to rapidly equip health care facilities and to support school reopening. HappyTap is now supplied globally through a network of partners, and production volumes have risen dramatically. The company expanded its footprint to include India in 2020, as well as Indonesia, Kenya and the United States of America in 2021.



The Happy Tap

© UNICEF/UNI395263/Raab

In some cases, NGOs support innovation to overcome barriers for marginalized and vulnerable people. For instance, WaterAid

has been supporting accessible handwashing facilities in the United Republic of Tanzania and Zambia (see Box 24).

Inclusive design makes handwashing accessible for people living with disabilities in the United Republic of Tanzania and Zambia

BOX 24

In the United Republic of Tanzania and Zambia, WaterAid supported the introduction of handwashing facilities that are designed to meet the needs of people living with disabilities. Facilities developed in the United Republic of Tanzania, in collaboration with the University of Dar es Salaam, include hands-free taps at various heights appropriate for people of varying ability, including those using wheelchairs. In response to COVID-19, these have been placed at bus stations, markets and health care facilities. In Zambia, WaterAid introduced mobile handwashing stations with ramps, with levers that can be operated by knees, feet or hands depending on the user's needs. The stations

are easy to maintain, and spare parts are available in most hardware stores. Local organizations are responsible for running these facilities and receive training in operation and maintenance, budgeting and financing to ensure sustainability.



Handwashing facilities for people living with disabilities

© WaterAid Hygiene Response to COVID19, WaterAid / Zambia, 2020/21



© UNICEF/UNI338112

6.6

Looking ahead: A pathway to 2030

Hand hygiene offers a low-cost, high-impact intervention that governments can harness to protect their citizens. **There is a clear mandate for governments to set policy around such a valuable public health measure, and to regulate and enforce its uptake, in particular in institutions such as schools and health care facilities, in public places, and in workplaces.** Governments can take advantage of existing global guidelines and standards (for instance, handwashing

resources on the COVID-19 Hygiene Hub, and WHO's *Minimum Requirements for IPC Programmes*⁸² and *Guidelines on Hand Hygiene in Health Care*) and the active partnerships working to push progress on hand hygiene, such as the Hand Hygiene for All initiative and the Global Handwashing Partnership. Governments can also rely on support from WHO's global hand hygiene campaign 'Save Lives: Clean Your Hands'⁸³ and other efforts to improve hand hygiene in health care facilities.

Some countries have found developing roadmaps for hand hygiene to be helpful.⁸⁴ To date, over 40 countries have developed hand hygiene roadmaps, supported by development partners. Roadmaps can help countries identify gaps in governance, financing, monitoring and capacity. They help governments identify strategic goals and opportunities for investments to improve hand hygiene and guide actions by aligning stakeholders from multiple sectors and investments around a common, co-developed vision and course of action. Roadmaps may exist independently, or they may be integrated into other national strategies. The process of developing a roadmap, and costing it, requires communication and alignment across ministries, departments and agencies, essential due to the cross-sectoral nature of hand hygiene. It also requires allocating authority to a lead agency and coordinating sector efforts. A roadmap can thus be a valuable first step in the development of robust hand hygiene policy and dedicated budgets.

Governments have a role to play in exploring new, sustainable, cost-effective

ways to support the affordability of household investments in handwashing facilities and consumables, such as soap. Likewise, new ways should be found to support hand hygiene in schools and health care facilities to ensure the long-term availability of soap and ABHR for all users. Innovative ways of working with the private sector, both multinationals and local entrepreneurs, should also be developed.

While there are many questions to be answered about how best to promote and support hand hygiene, examples of success can provide inspiration. Governments need to be imaginative, think outside the box and work with multiple stakeholders, including the private sector. As the examples in this chapter show, governments can find ways to forge partnerships, use operational budgets strategically, and encourage innovation. Governments can seize this moment of both opportunity and urgency to establish hand hygiene as a widely adopted practice that offers protection to everyone.

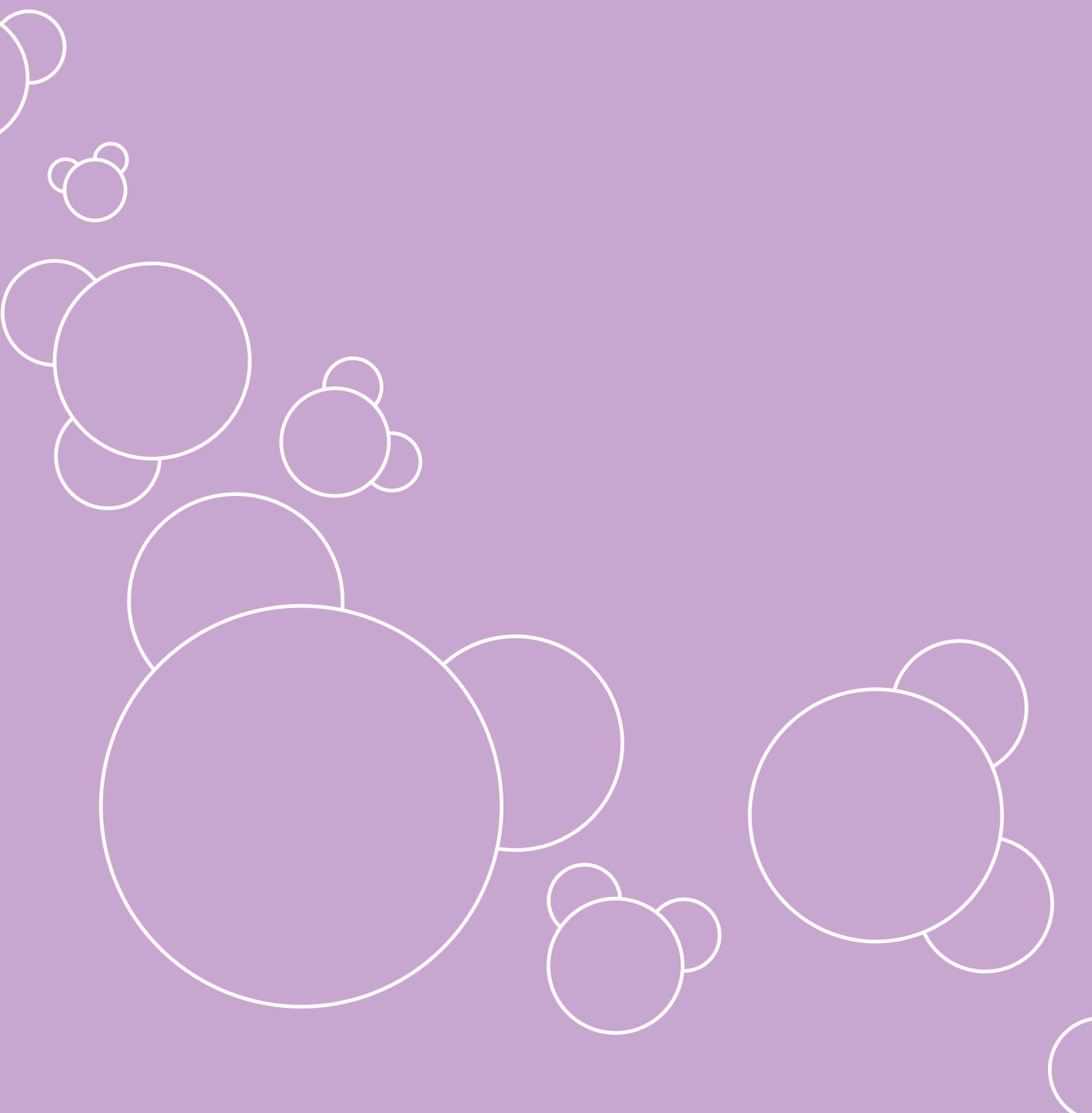


ENDNOTES

- ¹ World Health Organization, *WHO Guidelines on Hand Hygiene in Health Care*, WHO, Geneva, 2009.
- ² World Health Organization, *Scientific Brief: Transmission of SARS-CoV-2: implications for infection prevention precautions*, WHO, Geneva, 9 July 2020.
- ³ Park, J.H., et al., 'Perceptions and behaviors related to hand hygiene for the prevention of H1N1 influenza transmission among Korean university students during the peak pandemic period', *BMC Infect Dis*, 2010 Jul 28;10:222.
- ⁴ Dunn, P.M., 'Perinatal lessons from the past: Ignac Semmelweis (1818–1865) of Budapest and the prevention of puerperal fever', *Archives of Disease in Childhood - Fetal and Neonatal Edition*, 2005, 90: F345-FF348.
- ⁵ World Health Organization, *WHO Guidelines on Hand Hygiene in Health Care*, WHO, Geneva, 2009.
- ⁶ Pittet, D., et al., 'Effectiveness of a Hospital-Wide Programme to Improve Compliance with Hand Hygiene', *The Lancet*, 2000, 356(9238):1307-12. 2000.
- ⁷ World Health Organization, *Interim recommendations on obligatory hand hygiene against transmission of COVID-19*, WHO, Geneva, 2020.
- ⁸ World Health Organization and United Nations Children's Fund, *Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines*, WHO, Geneva, 2017.
- ⁹ Curtis, V., and S. Cairncross, 'Effect of washing hands with soap on diarrhoea risk in the community: a systematic review', *Lancet Infect Dis*, May 2003, (5):275-81.
- ¹⁰ World Health Organization, *WHO Guidelines on Hand Hygiene in Health Care*, WHO, Geneva, 2009.
- ¹¹ World Health Organization, *WHO Guidelines on Hand Hygiene in Health Care*, WHO, Geneva, 2009.
- ¹² White, S., et al., 'The determinants of handwashing behaviour in domestic settings: An integrative systematic review', *International Journal of Hygiene and Environmental Health*, Volume 227, 2020.
- ¹³ Biran, A., et al., 'Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma): a cluster-randomised trial', *Lancet Glob Health*, 2014, 2(3):e145-54.
- ¹⁴ Curtis, V. R. Aunger and T. Rabie, 'Evidence that disgust evolved to protect from risk of disease' *Philosophical Transactions of the Royal Society B: Biological Sciences*, 2004, 271, (Supplement 4).
- ¹⁵ Curtis, V., M. de Barra and R. Aunger, 'Disgust as an adaptive system for disease avoidance behaviour', *Philosophical Transactions of the Royal Society B: Biological Sciences*, January 2011, 366 (1563): 389–401.
- ¹⁶ Curtis, V., *Don't Look, Don't Touch, Don't Eat The Science Behind Revulsion*, University of Chicago, 2013, p. 184.
- ¹⁷ Grover, E., et al., 'Comparing the behavioural impact of a nudge-based handwashing intervention to high-intensity hygiene education: a cluster-randomised trial in rural Bangladesh', *Trop Med Int Health*, 2018, 23: 10-25.
- ¹⁸ Dreifelbis, R., et al., 'Behavior Change without Behavior Change Communication: Nudging Handwashing among Primary School Students in Bangladesh', *Int J Environ Res Public Health*, 2016;13(1):129.
- ¹⁹ Neal, D., et al., *The Science of Habit: Creating Disruptive and Sticky Behavior Change in Handwashing Behavior*, USAID/WASHplus Project, Washington D.C., USA, 2015.
- ²⁰ World Health Organization, *Hand Hygiene for All Initiative: Improving access and behaviour in health care facilities*, WHO, Geneva, 2020.
- ²¹ Allegranzi, B., et al., 'Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study', *Lancet Infect Dis*, 2013; 13(10): 843-51.
- ²² Luangasanatip, N., et al., 'Comparative efficacy of interventions to promote hand hygiene in hospitals: systematic review and network meta-analysis', *BMJ Glob Health*, 2015, 351: h3278.
- ²³ Vos, T., et al., 'Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019', *The Lancet*, 2020, 396(10258), pp.1204-1222.
- ²⁴ World Health Organization, *WHO Pneumonia Fact Sheet*, WHO, Geneva, 2 August 2019.
- ²⁵ Prüss-Ustün, A., et al. 'Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: An updated analysis with a focus on low- and middle-income countries', *Int J Hyg Environ Health*, 2019, 222: 765–777.
- ²⁶ Prüss-Ustün, A., et al. 'Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: An updated analysis with a focus on low- and middle-income countries', *Int J Hyg Environ Health*, 2019, 222: 765–777.
- ²⁷ United Nations Children's Fund, World Health Organization and the World Bank Group, *Global database on child growth and malnutrition. Joint child malnutrition estimates – levels and trends*, Geneva, WHO, 2019.
- ²⁸ Dangour, A.D., et al., 'Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children', *Cochrane Database of Systematic Reviews*, 2013, (8).

- ²⁹ World Health Organization, *Global report on the epidemiology and burden of sepsis: current evidence, identifying gaps and future directions*, Geneva, WHO, 2020.
- ³⁰ Luangasanatip, N., et al., 'Comparative efficacy of interventions to promote hand hygiene in hospital: Systematic review and network meta-analysis' *BMJ (Clinical research ed.)*, 2015.
- ³¹ Bouzid, M., O. Cumming and P.R. Hunter, 'What is the impact of water sanitation and hygiene in health-care facilities on care seeking behaviour and patient satisfaction? A systematic review of the evidence from low-income and middle-income countries' *BMJ global health*, 3(3), 2018.
- ³² Horton S., 'Chapter 7: Cost-Effectiveness Analysis in Disease Control Priorities', *Disease Control Priorities, Third Edition: Volume 9. Improving Health and Reducing Poverty*, Washington, World Bank, 2017: 147–56.
- ³³ OECD, *Stemming the Superbug Tide: Just A Few Dollars More*, OECD Health Policy Studies, OECD Publishing, Paris, 2018. The US\$1:US\$15 was extrapolated from Section 6.9., which states that implementation of improved hand hygiene policy "generates savings in health expenditure that represent, depending on the country, on average 15 times the implementation costs".
- ³⁴ Diageo, Gap, Unilever and WaterAid, *Strengthening the business case for water, sanitation and hygiene: how to measure value for your business*, 2018.
- ³⁵ Borghi, J., et al., 'Is hygiene promotion cost-effective? A case study in Burkina Faso' *Trop Med Int Health*, 2002 Nov;7(11):960-9.
- ³⁶ Black, R. et al., *Disease Control Priorities, Third Edition: Volume 2. Reproductive, Maternal, New-born, and Child Health*, Washington, World Bank, 2016: 319–334.
- ³⁷ Curtis V.A., L.O. Danquah and R.V. Aunger, 'Planned, motivated and habitual hygiene behaviour: an eleven country review' *Health Educ Res*, August 2009, 24(4):655-73.
- ³⁸ White, S., et al., 'A Qualitative Study of Barriers to Accessing Water, Sanitation and Hygiene for Disabled People in Malawi' *PLoS One*, 2016, 11(5).
- ³⁹ World Bank, *Reducing Inequalities in Water Supply, Sanitation, and Hygiene in the Era of the Sustainable Development Goals: Synthesis Report of the WASH Poverty Diagnostic Initiative*, Washington, World Bank, 2017.
- ⁴⁰ United Nations Children's Fund and World Health Organization, *Core questions on drinking water, sanitation and hygiene for household surveys: 2018 update*, New York, 2018.
- ⁴¹ Kilpatrick, C., et al., 'Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework' *Journal of Hospital Infection*, Vol 100 (2), 2018.
- ⁴² De Kraker, M. et al. *Hand Hygiene Implementation Strongly Associated With Availability of Funds: Results From the WHO Hand Hygiene Self-Assessment Framework Global Survey 2019*. Oral presentation at International Conference on Prevention and Infection Control, 14-17 September 2021, Geneva, Switzerland.
- ⁴³ Abstracts from the 6th international conference on prevention & infection control (ICPIC 2021), <https://aricjournal.biomedcentral.com/track/pdf/10.1186/s13756-021-00974-z.pdf>
- ⁴⁴ World Health Organization, *Hand Hygiene Self-Assessment Framework 2010*, Geneva, WHO, 2010.
- ⁴⁵ Mathai, E., et al., 'Promoting hand hygiene in health-care through national/subnational campaigns' *J Hosp Infect*, April 2011, 77(4):294-8.
- ⁴⁶ Grayson et al., 'Effects of the Australian National Hand Hygiene Initiative after 8 years on infection control practices, health-care worker education, and clinical outcomes: a longitudinal study' *Lancet Infect Dis*, 2018.
- ⁴⁷ World Health Organization, *Minimum requirements for infection prevention and control programmes*, Geneva, WHO, 2019.
- ⁴⁸ Kilpatrick, C., et al., 'Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework' *Journal of Hospital Infection*, Vol 100 (2), 2018.
- ⁴⁹ Abstracts from the 6th international conference on prevention & infection control (ICPIC 2021), <https://aricjournal.biomedcentral.com/track/pdf/10.1186/s13756-021-00974-z.pdf>
- ⁵⁰ World Health Organization, *Interim recommendations on obligatory hand hygiene against transmission of COVID-19*, Geneva, WHO, 2020.
- ⁵¹ Email correspondence with Andrea Beatriz Le-Llaser, Health Program Officer II, Program Implementation and Outreach Division, Department of Health, Health Promotion Bureau, government of the Philippines, 25 June 2021.
- ⁵² Business Fights Poverty, *Insight Report: A year on. A new blueprint for rapid collaboration?*, National Business Compact on Coronavirus, 2021.
- ⁵³ WHO-UNICEF JMP Monitoring Working Group, *Working paper: Mapping and gap analysis of tools designed to collect data on hand hygiene in public spaces*, June 2021.
- ⁵⁴ International Labour Organisation, *Hand hygiene at the workplace: an essential occupational safety and health prevention and control measure against COVID-19*, ILO, Geneva, 2020.
- ⁵⁵ World Business Council for Sustainable Development, *WASH Pledge self-assessment tool for business*, WBCSD, May 2020.

- ⁵⁶ World Business Council for Sustainable Development, *WASH Pledge impact report: Maximizing the business contribution towards water, sanitation and hygiene*, WBCSD, 2018.
- ⁵⁷ Tartari, E., et al., 'Implementation of the infection prevention and control core components at the national level: a global situational analysis', *J Hosp Infect*, Feb 2021, 108:94-103.
- ⁵⁸ Ross, I., et al., *Costs of hand hygiene for all in household settings - estimating the price tag for the 46 least developed countries*, forthcoming.
- ⁵⁹ Pickering, A.J., et al., 'The WASH Benefits and SHINE trials: interpretation of WASH intervention effects on linear growth and diarrhoea', *Lancet Glob Heal*, 2019, 7: e1139-46.
- ⁶⁰ World Health Organization, *Global Health Expenditure Database*, Geneva, WHO, 2021.
- ⁶¹ Curtis, V., L.O. Danquah and R.V. Aunger RV, 'Planned, motivated and habitual hygiene behaviour: an eleven country review' *Health Educ Res*, 2009;24(4):655-673.
- ⁶² Anjali Theagarajah, Unilever, personal communication, 6 August 2021.
- ⁶³ World Health Organization, *WHO Guidelines on Hand Hygiene in Health Care*, WHO, Geneva, 2009.
- ⁶⁴ Centers for Disease Control and Prevention, 'Ugandan health-care facilities produce own alcohol-based hand rub during COVID-19', accessed 5 August 2021, <https://www.cdc.gov/globalhealth/stories/2021/Ugandan-healthcare-facilities-alcohol-based-hand-rub.html>.
- ⁶⁵ World Health Organization, *Resource considerations for investing in hand hygiene improvement in health care facilities*, Geneva, WHO, 2021.
- ⁶⁶ World Health Organization, *WHO report on the global tobacco epidemic, 2019: Offer help to quit tobacco use*, 2019.
- ⁶⁷ World Health Organization, *WHO report on the global tobacco epidemic, 2019: Offer help to quit tobacco use*, 2019.
- ⁶⁸ US Department of Transportation, *How States Achieve High Seat Belt Use Rates*, 2008.
- ⁶⁹ History.com, 'When New Seat Belt Laws Drew Fire as a Violation of Personal Freedom', accessed 10 August 2020, <https://www.history.com/news/seat-belt-laws-resistance>
- ⁷⁰ Johns Hopkins Centre for Communications Programs, 'KAP COVID Trend Analysis for 23 Countries', assessed 16 September, 2021, <https://ccp.jhu.edu/kap-covid-trend-analysis-for-23-countries/>
- ⁷¹ Makhni, S., et al., 'Hand Hygiene Compliance Rate During the COVID-19 Pandemic', *JAMA Intern Med*, April 26, 2021.
- ⁷² UNICEF regional staff reports (Latin America and Caribbean, West and Central Africa, Middle East and North Africa, East and Southern Africa, Eastern Europe and Central Asia, South Asia, East Asia and the Pacific regional offices), 2021.
- ⁷³ Huang, C.H. et al., 'A nudge toward hand hygiene: simple design features improved handwashing among Filipino students', *IDInsight*, May 21, 2020.
- ⁷⁴ USAID, *Assessing the Effects Of COVID-19 on Access to Water, Sanitation and Hygiene in USAID High Priority and Strategy-Aligned Countries*, USAID, Washington, D.C., 2020.
- ⁷⁵ Email correspondence with Daniel Korbel, Sr. Manager, COVID-19 Hygiene Hub. (20 July 2021)
- ⁷⁶ Email correspondence with Kamila Galeza, Social Development Specialist at World Bank Group. (12 May 2021)
- ⁷⁷ World Health Organization, Global Infection Prevention and Control (IPC) Portal, <https://ipportal.who.int>
- ⁷⁸ World Health Organization and United Nations Children's Fund, 'JMP Core Questions', accessed 10 August 2021, <https://washdata.org/monitoring/methods/core-questions>
- ⁷⁹ USAID, *Assessing the Effects Of COVID-19 on Access to Water, Sanitation and Hygiene in USAID High Priority and Strategy-Aligned Countries*, USAID, Washington, D.C., 2020.
- ⁸⁰ Eco-Soap Bank, 'Eco-Soap Bank's COVID-19 Impact', accessed 16 September 2021, <https://eco-soapbank.org/covid19>
- ⁸¹ Email correspondence with Jason Cardosi, Leader – Partnerships and Market Insights (SATO) at LIXIL. (20 June 2021)
- ⁸² World Health Organization, *Minimum requirements for infection prevention and control programmes*, Geneva, WHO, 2019.
- ⁸³ World Health Organization, 'SAVE LIVES - Clean Your Hands: Annual global campaign', accessed 16 September 2021, <https://www.who.int/campaigns/world-hand-hygiene-day>.
- ⁸⁴ World Health Organization and United Nations Children's Fund, *Hand Hygiene for All: Brief on Country Roadmaps*, WHO, Geneva, 2020.



Programme Division/WASH
3 United Nations Plaza
New York, NY 10017 USA
www.unicef.org/wash

ISBN: 978-92-806-5290-1