Hand hygiene in communities and public settings: Proposal for WHO guidelines

1. Introduction

The Water, Sanitation, Hygiene and Health (WSH) Unit of the WHO Environment, Climate Change and Health Department is developing Guidelines on hand hygiene in community settings.

The first step in the guideline development process is identifying the scope (Guideline Development Handbook (GDH) Section 2.7.1). Scoping is a highly consultative process and involves a series of steps. This document presents the first of these: an initial draft scope and list of priority topics for review and inputs by a number of contributor groups (GDH Section 3). Before going into the scope, the document outlines the background and rationale for the proposed Guidelines, objectives, and process and contributors.

2. Background and rationale

2.1. Public health problem

Hand hygiene is critical to infection prevention and control, contributing to a wide range of health outcomes. Effective hand hygiene could prevent 165,000 deaths from diarrhoeal disease and 370,000 deaths from acute respiratory infections each year\(^1\), reduce hospital acquired infections by 15%\(^2\), and prevent one in 10 maternal deaths caused by infections associated with unclean birth environments\(^3\). Furthermore, frequent and correct hand hygiene is one of the most important measures to prevent infection with SARS-CoV-2\(^4\).

Nonetheless, hand hygiene in low- and middle-income countries is characterised by insufficient coverage, and inadequate policies, financing and monitoring. 30% of households and 43% of schools do not have basic handwashing facilities with soap and water available\(^5\). 32% of healthcare facilities lack hand hygiene facilities at the point of care\(^6\). Three quarters of those who lack access to water and soap live in the world’s poorest countries. A recent UN survey found that only 6% of respondent countries reported having sufficient financing to implement national hygiene plans\(^7\).

While this is not a new public health problem, COVID-19 has shone a spotlight on importance of hand hygiene as a cost-effective outbreak response measure. Vaccination requires months of research and

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development for even limited deployment and is vulnerable to global supply chain disruption. Social distancing measures harbour significant societal effects. In contrast, investment in hand hygiene represents a rapid, no-regrets investment, reducing both primary and secondary impacts of COVID-19.

2.2. Rationale

2.2.1. High demand for the proposed guideline

Hand hygiene has received an unprecedented level of attention by political leaders since the COVID-19 outbreak, and significant gains have been made. Governments, international agencies, the private sector and civil society have acted to bolster access to hand hygiene across the globe. For example, in Cambodia, the Government has achieved 100% hand hygiene access in schools. in Indonesia, the Government mandated minimum WASH and infection prevention requirements for safe reopening of schools by Joint Decree. Other examples of national action can be found here.

Beyond the immediate response, a number of countries have shown commitment to creating an enabling environment that is conducive to sustainable change. This is in line with the global Hand Hygiene for All initiative (HH4A). Launched in June of this year, HH4A calls on governments to critically review the national hand hygiene landscape, and develop a jointly agreed cross-sectoral roadmap that addresses shortcomings and builds on strengths. At the time of writing, 40 countries were engaged in processes to improve hand hygiene in policies and strategies.

Increased attention to hand hygiene has led to heightened demand across the global community for intervention and implementation guidance. Such demand underpins the creation of the COVID-19 Hygiene Hub, a free service to help actors in low- and middle-income countries rapidly share, design, and adapt evidence-based hygiene interventions to combat COVID-19. To date, the COVID-19 Hygiene Hub has had hundreds of enquiries from dozens of organisations across over 30 countries. A World Bank survey of government clients in mid-2020 also indicated demand for support on policy and programmatic hand hygiene improvements.

2.2.2. Gaps in existing WHO guidance on hand hygiene beyond the healthcare setting

Robust and detailed guidelines on what constitutes effective hand hygiene and how to improve it is available for the healthcare setting through the WHO Guidelines on core components of infection prevention and control programmes, WHO Guidelines on Hand Hygiene in Healthcare9, WHO Multimodal Improvement Strategy10, the Global Action Plan for WASH in healthcare facilities11 and the WHO Practical Steps12 to Achieve Universal Access to Quality Care through water, sanitation and hygiene (WASH) in healthcare facilities.

However, the healthcare setting has particular characteristics which affect not only risk factors but also risk management approaches for addressing them. WHO recommendations on hand hygiene outside the healthcare setting - in communities and public settings - is currently lacking. A large number of guidelines are clear on the rationale for hand hygiene investment (the ‘why?’), recommending it as a

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core preventative measure\textsuperscript{13-14}. However, fewer guidelines discuss what interventions could improve hand hygiene in the community or public spaces, or how to implement these. The \textit{WHO Guidelines on Sanitation and Health}\textsuperscript{15} recommend effective strategies for sanitation behaviour change, including handwashing with soap at critical times. However, the emphasis is on key hand hygiene moments associated with sanitation and defecation. Other hand hygiene moments merit attention, especially given increased concerns with the importance of hand hygiene to reduce fomite transmission of infectious diseases. Furthermore, information on handwashing infrastructure does not feature in this guideline. The \textit{WHO interim guidance on WASH and waste management for the COVID-19 virus}\textsuperscript{16} provides recommendations on handwashing materials and facility options both within healthcare facilities and in the community, but does not offer these for the behaviour change strategies required to ensure use.

2.2.3. The time is right

Meeting current demand for guidance on hand hygiene improvements is critical to sustaining the momentum created by the COVID-19 pandemic. Political will for accelerating health system resilience has historically been caught in a cycle of panic and neglect. The COVID-19 pandemic provides a new opportunity to build back better and create the systemic change needed to ensure that we are better prepared in future.

Furthermore, we have never known more about hand hygiene. There has been a significant injection of innovation and learning into the hand hygiene arena, which the proposed guidelines would build on. The past year has seen an unprecedented level of interest and investment in building our understanding of effective interventions and how to implement them, from research institutions and implementing agencies.

3. Objectives and target audience

3.1. Objectives

The proposed WHO guidelines have the following three objectives:

- **Objective 1:** Increase hand hygiene coverage and access through the provision of evidence-based recommendations on what constitutes good hand hygiene and effective interventions to achieve it and how to implement these across multiple contexts and settings.

- **Objective 2:** Assist in the three WHO priority areas underpinning the 13\textsuperscript{th} General Programme of Work: Universal Health Coverage, Health Emergencies, and Healthy Populations. WASH is an essential health service, essential to emergency preparedness, and an important socio-economic determinant of healthy populations.

- **Objective 3:** Assist in a number of population health outcomes, including reducing prevalence of diarrhoeal disease (including cholera), pneumonia, neglected tropical diseases, maternal and newborn sepsis, and healthcare associated infections.

3.2. Target audience

4. Primary users: These guidelines are primarily designed for use by national ministries of health and their local level counterparts. Health ministries have the mandate to protect and improve the

\begin{itemize}
\item \textsuperscript{13} World Health Organization, 2017. \textit{WHO recommendations on child health: guidelines approved by the WHO Guidelines Review Committee} (No. WHO/MCA/17.08). World Health Organization.
\item \textsuperscript{15} World Health Organization, 2018. \textit{Guidelines on sanitation and health}. World Health Organization.
\end{itemize}
health of people and their communities, and hand hygiene, both in the healthcare and the community settings, is one of a series of essential health measures for achieving this goal. While health ministries are not responsible for the delivery of every component of hand hygiene programmes across every setting, their mandate empowers them to coordinate different functions across various ministries. In line with this, the recommendations in these Guidelines are directed at health ministries and their function in enabling broader government action on hand hygiene.

5. **Other users:** Other government ministries, international organizations, funding agencies, nongovernmental organizations (NGOs), civil society, academia and others working on hand hygiene across multiple sectors will also have an interest in these guidelines when developing and contextualizing strategies, programmes and tools for hand hygiene measures to ensure they protect public health. At their broadest application the guidelines are a general reference on hand hygiene and health, together with the [WHO Guidelines on Hand Hygiene in Healthcare](http://www.who.int/hand_hygiene).\(^\text{17}\)

5. **Process and contributors**

4.1. **Process**

The guidelines will be developed according to the procedures and methods described in the WHO handbook for guideline development (WHO 2014). Accordingly, the development process will include:

- **Scoping:** Formulating scoping questions and key priority questions
- **Evidence review:** Conducting systematic reviews to answer the key questions
- **Evidence assessment:** Assessing the quality of the evidence
- **Formulating recommendations:** Drawing up evidence-based recommendations for action by national and local authorities
- **Writing the guidelines**
- **Dissemination plan:** Developing a plan for their dissemination and implementation

4.2. **Contributors**

Contributions to the guideline development process will be sought at key junctures, from a number of groups and individuals, including end-users and technical experts from a wide range of disciplines. The proposed groups are outlined below:

- **WHO Steering Group:** Comprising WHO staff from the Department of Public Health, Environmental and Social Determinants of Health (PHE), the Department of Integrated Health Services, the Partnership for Maternal, Newborn and Child Health, the Department for Neglected Tropical Diseases, and the Department for Pandemic and Epidemic Diseases as well as environmental health regional focal points from all six WHO regions. The steering group will be involved in the planning, coordination and management of the entire process, from the development of scoping questions to final publication of the guidelines.

- **Guidelines Development Group:** The Guidelines Development Group (GDG) will include members with expertise across the various relevant content areas. It will be consulted at critical points during the development process, including commenting on the key questions and suggested methods for the systematic reviews, contributing to and/or reviewing systematic reviews, formulating recommendations and supporting the drafting and reviewing of different chapters of the guidelines. The group will be balanced in terms of gender and geography, and include technical experts as well as end-users. The GDG will also include a methodologist with

experience in systematic reviews, the GRADE (Grading Recommendations, Assessment, Development and Evaluation) approach and translation of evidence into recommendations.

- **Systematic review teams:** The commissioned systematic reviews will be conducted by experts with extensive experience in carrying out systematic reviews on environmental health interventions (including hand hygiene) using Cochrane-style as well as broader qualitative and mixed-method systematic review methods and application of the GRADE approach for assessing the quality of the evidence.

- **External peer review group:** The external peer review group will provide inputs towards the systematic reviews and appraise and comment on advanced draft chapters of the guidelines.

- **External partners and observers:** Representatives of external partners will be invited to participate as observers in the meetings of the GDG.

- **Management of conflicts of interest:** All members of the GDG and external peer review group will complete a WHO declaration of interest form. These will then be reviewed for potential conflicts of interest.

5. **Scope, priority topics & potential questions**

5.1. **Scope**

The proposed guidelines are concerned with the practice of hand hygiene to protect health outcomes.

**Community setting:** The guidelines will address a current gap in international guidelines on hand hygiene in the community setting, complementing existing robust guidelines on hand hygiene within the healthcare setting. A community setting is broadly defined as a setting for which the primary purpose is not medical care. Key contexts within the community setting include households, public spaces (defined as spaces where the public gathers\(^{18}\)), schools, workplaces and prisons.

**Low resource, long-term development contexts:** Given the greater burden of disease associated with hand hygiene in low resource settings, the recommendations for the proposed guidelines are targeted towards these contexts. Within these contexts, the Guidelines will formulate recommendations primarily relevant to long-term development plans, complementing existing recommendations on hand hygiene in acute humanitarian response settings available through the [Sphere standards](http://www.unesco.org/new/en/social-and-human-sciences/themes/urban-development/migrants-inclusion-in-cities/good-practices/inclusion-through-access-to-public-space/) for water, sanitation and hygiene promotion (WASH). Acknowledging moments of transition between humanitarian and long-term development contexts, the recommendations in the proposed Guidelines will be relevant to both stable and fragile states pursuing long-term development plans.

While the Guidelines are primarily intended for use in long-term development plans to build resilience to and preparedness for future outbreaks, the recommendations proposed would also prove useful as part of broader outbreak response strategies.

5.2. **Priority topics**

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The proposed guidelines will tackle key topics in which a change in practice is desired and feasible on where controversy or uncertainty exist. The formulation of priority topics and key questions for the guidelines will be informed by critical current evidence needs and developed through a number of processes, namely:

- Initial discussions among the WHO Steering Group and selected members of the Guideline Development Group (GDG);
- Consultation with all members of the GDG during the first GDG meeting;
- Consultation with the Systematic Review team.

The following is a set of initial set of priority topics, and, within those, a set of potential questions for arriving at recommendations on these topics:

**Effective hand hygiene**: When, for how long and with what should hand hygiene in the community setting be practiced to ensure the desired protective health effect?

**Minimum requirements**: What constitute minimum requirements for effective hand hygiene in the community setting?

**Behaviour change**: What are key components of at-scale, sustainable, behaviour change campaigns in the community setting?

**Government measures**: What government measures should governments implement to ensure minimum requirements and behaviour adoption?

**Implementation framework**: How can health ministries catalyse and coordinate implementation of the necessary policy interventions?

5.3. **Areas of controversy or uncertainty**

The formulation of recommendations under each priority question will rely on evidence-based investigation of key outstanding questions.

**Effective hand hygiene**

Hand hygiene is a general term referring to any action of hand cleansing that has the purpose of physically or mechanically removing dirt, organic material and/or micro-organisms (World Health Organization, 2009). Effective hand hygiene can be defined as the effective removal or deactivation of germs from hands, with a protective impact on infectious-disease-related outcomes.

We’ve known since the mid 19th century that hand hygiene can protect health by reducing the spread of infectious diseases. These diseases can be caused by bacterial, viral or protozoan pathogens 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. There is a strong evidence base supporting the efficacy of hand hygiene in removing pathogens from hands (insert references).

However, internationally agreed recommendations on when, how and with what product(s) hand hygiene should be practiced in the community setting to protect health is lacking. Such recommendations would enable governments to develop evidence-based, health-focused policies and
strategies. In order to provide recommendations, we need a greater understanding of the relative effectiveness of products, duration, and critical control points in removing sufficient pathogens from hands for a protective health effect.

**Minimum requirements**

Minimum requirements for effective hand hygiene are defined for the purposes of these Guidelines as those elements that are essential to the practice of effective hand hygiene. Broadly speaking, these relate to access by everyone, when needed, to the necessary amount of affordable (a) water and (b) soap (or ABHR in water scarce situations) (c) when and where needed (key locations), coupled with (d) awareness of why to practice hand hygiene (related key public health risks) and how to practice effective hand hygiene.

Internationally agreed recommendations on minimum standards for effective hand hygiene are currently lacking. WHO interim recommendations on obligatory hand hygiene against transmission of COVID-19 provide guidance on hardware in key locations in the context of COVID_19 response. However, as we move to embed the current heightened concern for hand hygiene within our normal routines and long-term government development plans, recommendations are lacking.

In order to define minimum requirements for effective hand hygiene, a greater understanding of quantity of water and soap required, key locations for these across multiple settings, and health promotion and risk communication is required.

**Sustained behaviour change**

While essential, minimum standards alone are unlikely to be effective in creating sustained hand hygiene behaviour across the general population. There is strong evidence to support government investment in effective behaviour change promotion. Behavioural science and theoretical frameworks underpinning our understanding of what drives or hinders behaviours are well established\(^{19}\)\(^{20}\). Furthermore, there is a growing body of evidence on what drives and hinders behaviour change\(^{21}\)\(^{22}\) and how to leverage these to develop effective messaging.

However, the particulars of delivery mechanisms, intensity and frequency are still poorly understood\(^{23}\)\(^{24}\). A set of clear recommendations on the design of effective, at-scale behaviour change

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promotion, will guide intervention planning, and be particularly valuable in contexts with constrained budgets and competing priorities.

**Government measures**

Governments are responsible for ensuring the minimum requirements for effective hand hygiene outlined above are in place across key contexts in the community setting, so that the national population can protect their health and the health of those around them. Responsibility for ensuring minimum requirements is spread across government ministries, according to whether they relate to hardware or software, and across contexts (households, schools, etc). These responsibilities are often executed as part of broader packages, with multiple actors involved.

However, internationally agreed recommendations on what at-scale policy interventions governments should adopt to ensure minimum standards across key contexts within the community setting are lacking.

In order to identify such recommendations a greater understanding is needed of roles and responsibilities of different government ministries in ensuring access to affordable water and soap at key locations and the most effective legislative, executive, administrative, fiscal and other policy interventions for fulfilling these.

**Implementation framework**

The Guidelines propose to provide recommendations on how health ministries, as the lead ministry for hand hygiene, can catalyze action across relevant government ministries and coordinate implementation of the policy interventions above.

Frameworks and tools for understanding and monitoring the components of an effective implementation strategy for WASH and health are well-established (SWA building blocks, GLAAS, WASH-BAT). However, hand hygiene in community settings has been systemically under-prioritised and under-funded (GLAAS report). Very little in the literature about impact of policy environment on behaviours and health outcomes. In addition, anecdotal examples of success – Swacht Bharat – offer little in the way of explanation of levers/recommendations.

The impetus to change this is stronger than ever, as the gains achieved due to the COVID-19 pandemic threaten to dissipate without strong structures to sustain them.