Considerations for community hand hygiene practices in low- resource situations

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1. Introduction

1.1 Background

Current best practices for hand hygiene recommend washing hands with soap and water when visibly dirty or after using the toilet, or using an alcohol-based hand rub when hands are not visibly soiled.[1]

The World Health Organization (WHO) recently released interim guidelines with the aim of widely improving hand hygiene practices to help prevent transmission of coronavirus disease 2019 (COVID-19) in communities by: "Providing universal access to public hand hygiene stations and making their use obligatory on entering and leaving any public or private commercial building and any public transport facility."[2] This is achievable in most situations. However, these principles and practices rely on basic infrastructure and a reliable supply chain. There may also be issues with available resources, such as safe water.

Accessibility and availability of these resources and infrastructure can be problematic in some parts of the Western Pacific Region. These disparities among and within Member States can result in difficulties in access to hand hygiene supplies and safe water in some areas, especially rural and remote communities.

WHO and the United Nations Children's Fund (UNICEF) reported in 2015 that 91% of the world's population has access to safe water. That leaves 663 million people without safe water. A significant proportion of these people live in the Oceania region, home to a large percentage of Western Pacific Member States.[3] Engagement with the water, sanitation and hygiene (WASH) sector to enhance the availability of improved water supplies and soap to low-resource settings is a priority for the Region, along with recognizing and protecting vulnerable populations.[4]

This document provides community guidance on evidence-based alternative hand hygiene strategies in the absence of clean running water, soap or alcohol-based hand rub. The strategy also complements the WHO *Priority Actions to Care for and Protect Vulnerable People during Community Transmission of COVID-19: Interim Guidance*.[4]

1.2 Target audience

This guidance is intended for use by communities, community agencies and nongovernmental organizations to assist in improving hand hygiene practices in extreme low-resource situations.

2. Evidence-based alternatives to traditional hand hygiene methods in extreme low-resource settings

The alternatives suggested in this section are based on an exhaustive review of available literature focused on identifying alternative hand hygiene practices and water sources to be used in case of temporary or long-term absence of water. This guidance is particularly relevant to rural and remote communities and vulnerable populations within the Region.

2.1 Use of friction

The use of an agent to create friction with a water source (including repurposed water – see 2.2) is the most effective method to perform hand hygiene. The following are the most readily accessible options with the greatest decrease of potential disease-causing contamination in resource-limited settings, according to the literature:

1. Sand[5,6]
2. Ash[7]
3. Soil[7]
4. Borax[8].

Common to all these agents is their coarse or gritty nature, which assists in removing contaminants from skin. Even the use of water only with vigorous rubbing of the hands was reported to be effective in some studies.[5,8] Similarly, creating friction for at least 20 seconds with water alone decreases the biological burden on hands.[9]

2.2 Repurposing of water

While safe water is available to 91% of the global population, there is still a need to use water rationally. Repurposed water (that was previously used for other purposes) can be effective in performing hand hygiene.[10–13] Suggested sources include, but are not limited to:

1. Cooking water (such as water used in boiling vegetables, rice)[7]
2. Laundry water[7]
3. Bath water[7]
4. Pond water (see 2.3 Limitations); and[7,14]
5. Seawater[15].

Water with a high saline content (seawater) has also been suggested as an option to create a hypochlorite hand hygiene solution.[15] Similarly, other sources such as rainwater may be considered.

While the above options are not ideal, using these sources of water with friction (agents or otherwise) can reduce the presence of contaminants on hands.

2.3 Limitations

The above strategies give alternative options to performing hand hygiene in extreme low-resource settings and situations, but some key aspects were not reported in the literature. Use of this guidance must take these aspects into account. As such, there is no evidence that reports:

1. Long-term effect of using these agents
2. Incidence of dermatitis or effects on skin integrity
3. Compliance with hand hygiene practices
4. Drying of hands
5. Health outcomes of use of soil and/or alternative water sources (such as stagnant/pond water).

3. Non-evidence-based alternatives to traditional hand hygiene methods in extreme low-resource settings

Other options for performing hand hygiene in extreme low-resource settings using non-traditional methods have not been reported in the literature.

However, anecdotal accounts suggest other items can be useful in hand hygiene, including coconut fibres, indigenous flora, tree bark and rainwater.

Each of these agents requires friction to generate the desired hand cleansing effect.

3.1 Conclusions and considerations

Generating friction is the most important element of hand hygiene, regardless of the agent, and safe alternative water sources can be considered to facilitate this. Engaging with communities to identify and promote local methods to perform hand hygiene is required. This includes the recognition of alternative and accessible safe water sources and traditional agents and indigenous flora such as leaves, roots and other friction-generating substances in the environment.

4. Guidance development

4.1 Acknowledgements

This document was developed by a guidance development group composed of staff from the WHO Regional Office for the Western Pacific (WHO Health Emergencies Programme and Division of Health Systems and Services).

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4.2 Guidance development methods

This document was developed based on an integrative review of relevant literature and guideline development group discussion and consensus. Relevant literature was sourced from MEDLINE, Embase and CINAHL using extensive search terms detailed in the integrative review performed to support this guidance.

4.3 Declaration of interests

Interests have been declared in line with WHO policy, and no conflicts of interest were identified from any of the contributors.

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