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RECOMMENDATIONS ON ENVIRONMENTAL PUBLIC HEALTH FOR TEMPORARY SHELTERS

Place where shelter, food, clothing and health are temporarily provided to vulnerable people who cannot stay at home

REMEMBER THAT

- The continuous availability of free safe water, as well as hygiene and cleaning products, are essential to facilitate adequate hand hygiene, which, with proper waste management in priority public spaces, is essential to protect human health and will help prevent transmission of SARS-COV-2 from person to person.

BE SURE TO

- Strengthen the existing environmental public health surveillance system to ensure the continuity of services in those places. If it does not exist, develop a simple surveillance / monitoring system for environmental public health services.
- Train health personnel, temporary shelter management and local volunteers on basic measures of Infection Control and Prevention (IPC) in public spaces and community areas, in coordination with all actors present in the shelter.
- Adopt measures to ensure the equity of environmental public health services for all the most vulnerable people, including the elderly and people with special needs.

KEY RECOMENDATIONS

Safe Water Supply	
Key actions	Monitoring
Provision and Treatment <ul style="list-style-type: none">• Ensure a drinking water supply service from protected water sources or from treated water supply networks.• In the case of water coming from unprotected (and untreated) sources, carry out some type of treatment, centralized or household, with simple methods such as filtration and disinfection.• At home, boiling and filtration are proposed.• In case of not having an adequate water supply service, consider transporting water by water bowser (managed by companies or national institutions	<ul style="list-style-type: none">✓ Ensure the implementation of a water quality control and surveillance program in the temporary shelter.✓ Ensure throughout the water system the presence of residual chlorine of at least 0.5 mg / L measured at the end points (taps) of the distribution system.✓ If water is distributed in water bowsers, ensure that the residual chlorine dose is between 0.5 - 1 mg/L.✓ It is important to have chlorine test kits to measure the presence of chlorine in water

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<p>responsible for the supply of drinking water) and / or installing additional water storage.</p> <ul style="list-style-type: none">• If the taps at the point of consumption are not pedal or elbow, make sure that they are either disinfected regularly along with regular hand washing, or disposable paper towels are provided (or individual cloth towels are used in if there is no paper left) to use when opening and closing the taps and being able to safely remove (or wash) the towels later- <p>Storage</p> <ul style="list-style-type: none">• When water storage is necessary, it should be in a clean container with a lid.• Storage containers, both individual and collective, must be washed prior to use and regularly cleaned.• Containers that have previously contained chemicals or oils are not suitable for water storage. <p>Access</p> <ul style="list-style-type: none">• Ensure that both the population of the temporary shelter and its managers identify and have access at all times to a controlled safe water point.• Ensure safe water points at the entrance and exit of the shelter, in the bathrooms, service areas and common spaces.• It is important to promote visual, auditive and verbal messages for individual and collective water management and household treatment where there is no access to the service.	<p>(for example, a colorimetric test and diethylphenylenediamine [DPD] tablets).</p> <p>✓ It is important to ensure sufficient safe water supply * for:</p> <ul style="list-style-type: none">· human consumption· hand washing· personal hygiene· laundry· washing and disinfecting objects and surfaces regularly· use in sanitation, whenever the technology used and anal cleaning method require it. <p>*Enough water: The minimum amount of daily water per person will depend on the agreed standards for this emergency in each country and in each sector group or cluster. Consult at the national level to act in coordination with the other actors.</p>
<p style="text-align: center;">Recommendations for social distancing</p>	
<p>In order to promote physical distance between people while waiting for and collecting water, it is suggested to place indelible markings on the ground at a minimum of 2 m intervals at all community water supply points.</p>	

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Hand hygiene	
Hand hygiene in non-health care settings is one of the most important measures that can be used to prevent SARS-COV-2 infection	
Key actions	Promotion of hand hygiene
<ul style="list-style-type: none"> • Make hand hygiene facilities functional, accessible and free with soap and water or equivalent by increasing the number of points and ensuring accessibility for users, taking into account their mobility conditions. • Have soap and water for hand washing. In cases where this is not possible, the following options are considered: <ol style="list-style-type: none"> 1) Alcohol-Based Hand Rub (ABHR 70%) 2) a sodium hypochlorite disinfectant solution at 0.05%¹ concentration (see table below) <p>Solutions 1) and 2) can be used if hands are not visibly dirty or contaminated with secretions.</p> <p>Access</p> <ul style="list-style-type: none"> • Functional hand hygiene facilities must be present at all points of care in the temporary shelter, at a maximum of 5 meters from the bathrooms, in common areas, dining rooms, service areas and at the entrance and exit to the shelter. • Functional hand hygiene facilities must be equipped with soap and water or an equivalent and be accessible and free to all families and visitors to the temporary shelter. 	<p>Moments for hand hygiene</p> <ul style="list-style-type: none"> ✓ Hand hygiene should always be done before preparing food, before and after eating, after using the bathroom and changing a child's diaper, and after touching animals. ✓ In addition, handwashing should be ensured after touching surfaces; door handles; light switches; and after blowing your nose, coughing, or sneezing <p>How should hand hygiene be performed?</p> <ul style="list-style-type: none"> ✓ If soap and water are used: wash your hands for 40-60 seconds applying the appropriate technique. ✓ If using alcohol-based hand sanitizer: wash your hands for 20-30 seconds, using the appropriate technique, if your hands are not visibly dirty or are not contaminated with secretions. ✓ Visual and auditive messages with hand hygiene techniques should be posted in functional hand hygiene facilities.
Recommendations for social distancing	
In order to promote physical distance between people during waiting and hand washing, it is suggested to place indelible markings on the ground at a minimum of 2 m intervals at all community hand hygiene facilities.	

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Cleaning and disinfection

Key actions

- Surfaces in all common areas of the temporary shelter (dining rooms, bathrooms, water points, common areas, etc.) should be cleaned regularly (at least once a day), particularly frequently touched surfaces (railings, dining tables, window and door handles, toys, teaching devices and supplies, etc.).
- Use soap or household detergent and safe water to first clean, and then after rinsing, use a sodium hypochlorite disinfectant solution at 0.1% concentration (see table below) leaving to act for at least 1 minute.
- Personal Protective Equipment (PPE), including disposable mask, goggles, fluid resistant apron or coverall / gown, and disposable gloves, should be used during cleaning and disinfection. Remember that these supplies are for personal use.
- Perform hand hygiene with soap and water or an alcohol-based hand sanitizer after removing PPE and avoid touching your eyes, nose, and mouth with unwashed hands

Waste management

Key actions

- Use waste containers (individual or community) with lids and with garbage bag inside. If this is not possible, you should choose a container with a tilting / oscillating lid.
- Ensure that all tissues used for nose, mouth, eyes and anal cleaning are disposed of in a bag.
- Identify a storage location to handle large volumes, a trucking mechanism, and manage final disposal as per national norms.
- PPE), including disposable mask, goggles, fluid resistant apron or coverall / gown, and puncture proof gloves, must be worn during waste management. Remember that these supplies are for personal use
- Perform hand hygiene with soap and water or an alcohol-based hand sanitizer after removing PPE and avoid touching your eyes, nose, and mouth with unwashed hands

Sanitation

Key actions

- Human excreta must be managed safely throughout the entire sanitation chain, starting with access to functional toilets or latrines (they must be cleaned regularly and accessible), and ensure safe conditions for containment, transport, the treatment and eventual final disposal of wastewater.
- Wastewater from sinks, showers (gray water) and toilets / latrines with water discharge (sewage), must be channelled through a conventional pipe system into the external sewer or into a system specially built to eliminate them.
- If there are no pre-existing sanitation services in the temporary shelter, and if space and local conditions allow, pit latrines may be the option of choice. Standard precautions should be taken to avoid

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contamination of the environment by excreta. These precautions include ensuring that there are at least 1.5 meters between the bottom of the well and the water table.

- All open sewage drainage systems must be covered to prevent breeding of disease vectors or people becoming infected from direct exposure.

Ventilation

Key actions

- Ensure good ventilation of spaces and avoid confined conditions. This may include opening windows to the outside when there is little outdoor pollution.
- Avoid using solid fuels and kerosene for cooking and heating if possible. Should these fuels be used, operators should increase outdoor ventilation in kitchen areas and notify authorities with a view to procuring cleaner energy alternatives.

HOW TO PREPARE THE DISINFECTANT SOLUTIONS.

- Use locally available sodium hypochlorite products, the concentration of which is indicated on the label of the container, to mix the appropriate concentration of disinfectant solution suitable for its intended use, as per the indications shown in the table below.
- Use personal protective equipment such as gloves, masks, eye protection and aprons when mixing the solutions.
- Prepare solutions daily according to stated needs and in alignment with amounts shown in the table below.
- Use specific containers for each of the prepared solutions, and mark (label) the containers clearly with the different concentrations.
- Do not re-use packaging from edible products to prepare the disinfectant solution in order to avoid the risk of accidental poisoning.
- Add the amount of sodium hypochlorite to the amount of water as indicated in the table below.
- Do not mix sodium hypochlorite with soaps or cleaners.
- Store sodium hypochlorite out of the reach and sight of children, in a safe place that is not exposed to light and heat.
- Use sodium hypochlorite products without added fabric softeners, colors or perfumes.

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Sodium Hypochlorite concentration	Disinfectant Solution Concentration							
	0.05% ¹				0.1%			
(as per label)	For hand washing and laundry				For disinfection of surfaces and floors, and cleaning utensils			
	Quantity of sodium hypochlorite		Quantity of water		Quantity of sodium hypochlorite		Quantity of Water	
1%	50 ml	1/5 cup	1 L	1 qt	100 ml	2/5 cup	1 L	1 qt
3%	16 ml	3 tsp	1 L	1 qt	30 ml	1 oz	1 L	1 qt
4%	13 ml	1/2 oz	1 L	1 qt	25 ml		1 L	1 qt
5%	10 ml	2 tsp	1 L	1 qt	20 ml	4 tsp	1 L	1 qt
10%	5 ml	1 tsp	1 L	1 qt	10 ml	2 tsp	1 L	1 qt

Climate Change and Environmental Determinants of Health Unit
Communicable Diseases and Environmental Determinants of Health Department

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¹ If you do not have soap and water, 70% alcohol gel or Hydrogen Peroxide, a sodium hypochlorite disinfectant solution at 0.05% concentration could be used to wash your hands. However, this is the least recommended option, since frequent use can lead to allergies, dermatitis, depigmentation, and even asthma.