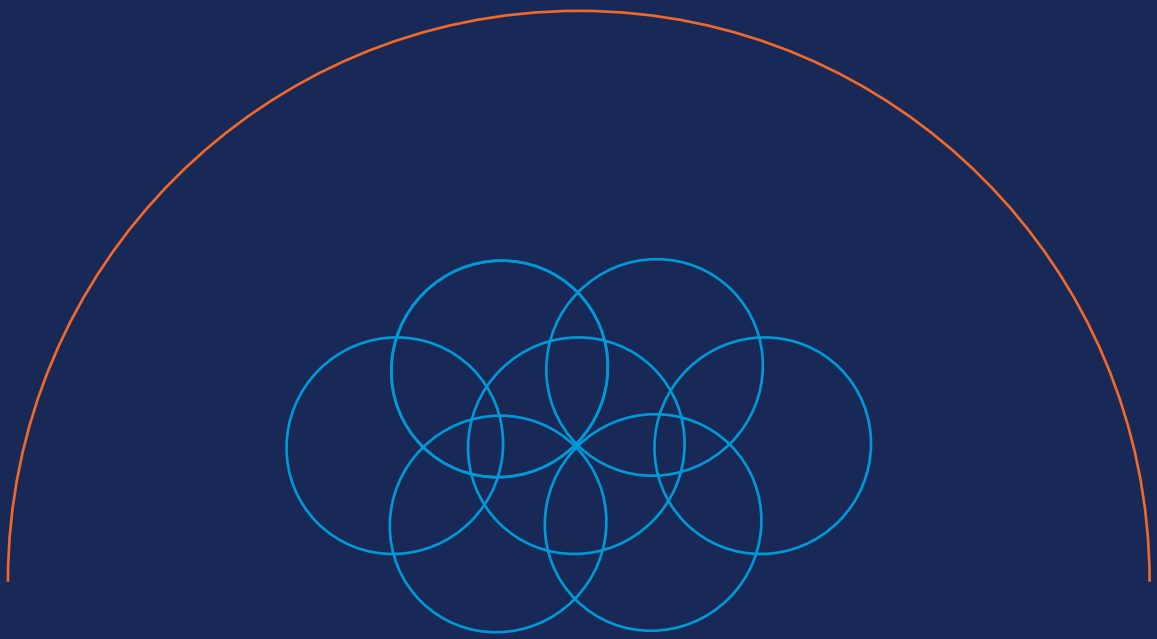
Infection prevention and control and water, sanitation and hygiene measures in health-care settings and shelters/ congregate settings in Gaza

Technical note

22 February 2024



World Health Organization

unicef | for every child

Infection prevention and control and water, sanitation and hygiene measures in health-care settings and shelters/ congregate settings in Gaza

Technical note

22 February 2024

World Health Organization

unicef | for every child

Infection prevention and control and water, sanitation and hygiene measures in health-care settings and shelters/congregate settings in Gaza: Technical note, 22 February 2024

WHO/oPt/IPC_WASH/2024.1

Suggested citation. Infection prevention and control and water, sanitation and hygiene measures in health-care settings and shelters/congregate settings in Gaza: Technical note, 22 February 2024. Geneva: World Health Organization and United Nations Children's Fund (UNICEF), 2024 (WHO/oPt/IPC_WASH/2024.1). Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Sales, rights and licensing. To purchase WHO publications, see https://www.who.int/publications/book-orders. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/copyright.

Design and layout by Maraltro.

Table of contents

Acknowledgements

World Health Organization (WHO) gratefully acknowledges the many individuals and organizations who contributed to this technical note, which include Ministry of Health State of Palestine, United Nations Relief and Works Agency (UNWRA), WASH Cluster State of Palestine, Health Cluster occupied Palestinian territory (oPt), Global Health Cluster, IPC Public Health Emergency Working Group, WASH in Public Health Emergency Network, UNICEF, external peer reviewers and WHO at the three levels (individual names listed below).

The development of the technical note was coordinated by April Baller, who also led the writing together with Hibak Osman Mahamed, Madison Moon and Nosheen Usman of the Department of Country Readiness Strengthening, WHO Health Emergencies Programme.

Ministry of Health State of Palestine
Rami Al-Abadla, Director of Safety, Infection Prevention and Control Unit, Gaza.

United Nations Relief and Works Agency (UNWRA)
Akihiro Seita; Hamad Khalil; Julianna Smith; Natalie Fischer.

WASH Cluster occupied Palestinian territory (oPt)
Drew Baldwin, ACF Spain; Isabel Cobb, ACF Spain; Jeffrey Silverman; Oxfam Vikas Goyal, WASH Cluster coordinator/ UNICEF; Osama Mohammad M Al-Sheikh Ali, WASH Cluster/UNICEF.

Health Cluster oPt and Global Health Cluster
Andrea King; Eba Al-Muna Pasha; Chipo Takawira.

IPC Public Health Emergency Working Group
Colin Brown, WHO Collaborating Centre for Reference and Research on Antimicrobial Resistance and Healthcare Associated Infections, United Kingdom; Dale Fisher, Yong Loo Lin School of Medicine, National University of Singapore, Singapore; Mushtuq Husain, Institute of Epidemiology, Disease Control & Research, Bangladesh; Emilio Hornsey, UK Public Health Rapid Support Team, United Kingdom; Fernanda Lessa, International Infection Control Program, US Centers for Disease Control and Prevention (CDC), United States of America; Kalisvar Marimuthu, National Centre for Infectious Diseases, Tan Tock Seng Hospital, Singapore; Katie Wilson, International Infection Control Programme, US Centers for Disease Control and Prevention (CDC), United States of America.

WASH in Public Health Emergencies Network
Lana Abdul Samad, Oxfam, Lebanon; Mohammed Ammar, ECHO Gaza, occupied Palestinian territory; Claudio Deola, Save the Children UK, United Kingdom; Michelle Farrington, Oxfam, United Kingdom; Thomas Handzel, US Centers for Disease Control and Prevention (CDC), United States of America; Paul Hunter, University of East Anglia, United Kingdom; Daniele Lantagne, Tufts University, United States of America; Jean Lapègue, Action contre la Faim (ACF), France; Paul Patrick Onyango, ECHO Nairobi, Kenya; Maryna Peter, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Guillaume Pierrehumbert, International Committee of the Red Cross, Switzerland; Mark Sobsey, University of North Carolina and Aquagenx, LLC, United States of America; Syed Yasir Ahmad, International Medical Corps, United Kingdom; Marij Zwart, Netherlands Red Cross, Netherlands.

UNICEF
Chris Cormency; Gemma Querol; Lindsey Denny; Omar El Hattab; Micheal Emerson Gnilo; Abdoulaye Fall; Raoul Kamadjeu; Jennifer Lamb; Pierre Yves Oger; Jerome Pfaffman; James McQuen Patterson; Jamal Shah.

WHO Country Offices, Regional Offices and Headquarters
Randa Abu Rabe; Osama Ali Maher; Benjamin Bouquet; Ana Paula Coutino Rehse; Devika Dixit; Nazik Elshiekh; Joanna Esteves Mills; Bruce Gordan; Hannah Hamilton; Iman Hewidy; Maggie Montgomery; Maria Clara Padoveze; Giovanni Satta; Victoria Willet; Teresa Zakaria.

1

Introduction

1: Introduction

1.0 Background

As of January 31 2024, syndromic surveillance screening in the Gaza has reported 245 858 cases of acute respiratory infections, 161 285 cases of diarrhoea, 6 625 of chickenpox, and 7 737 cases of jaundice *(1)*. The risk of further spread of epidemic-prone diseases is high due to overcrowding, inadequate water, sanitation and waste management, lack of medical/ infection prevention and control (IPC) and basic hygiene supplies, disruption of routine, vaccine-preventable disease programmes, and a dysfunctional health system, including staffing issues due to conflict.

Assessing IPC- and Water, sanitation and hygiene (WASH)-related risks and implementing IPC and WASH measures is pivotal to mitigating the spread of infectious diseases and ensuring a safe environment for patients, visitors, family members and health and care workers. However, given the significant infrastructural damage combined with interrupted water, sanitation, waste management and energy services and reduced access to medical and IPC supplies, this document presents a tailored approach to the implementation of core IPC and WASH measures.

This technical note is based on the guiding principles of:

- Sphere handbook *(2)*,
- Standard precautions for the prevention and control of infections: aide-memoire *(3)*,
- Transmission-based precautions for the prevention and control of infections: aide-memoire *(4)*,
- Essential environmental health standards for health-care *(5)*.

This technical note contains two sections: 1) Health-care[1] 2) Shelters[1]/congregate settings.

This technical note should be referenced when standard and transmission-based precautions cannot be applied. This document will be updated on a need's basis.

1.1 Objective

The objective of this document is to outline relevant IPC and WASH measures in the context of the ongoing conflict in Gaza. It also provides alternative options for implementing these measures, acknowledging contextual and capacity constraints. Users should assess their unique situations to determine the feasibility of implementing these measures.

1.2 Intended audience

This document is for infection prevention and control and water, sanitation, and hygiene focal points, national and local public health authorities, frontline health and care workers, humanitarian organizations, aid workers and responders, and partner organizations that are supporting response operations.

1.3 Contextual considerations

A plan for implementation of the IPC/ WASH considerations outlined in this technical note must be underpinned by a structured situational analysis and needs assessment, as well as an examination of operational constraints and barriers to action. In scenarios where the interventions described in this technical note cannot feasibly be attempted

[1] In this document, the term "health-care settings " denotes sites whose primary function is to offer medical care (e.g. hospitals, primary health centres, mobile medical teams, etc.), while "shelters/congregate settings" are designed primarily to house displaced individuals (e.g. in schools, tents, formal shelters, etc.). However, it is acknowledged that in Gaza, health-care settings may also serve as shelters for displaced individuals, and shelters may also provide medical care.

or implemented and no suitable alternative can be identified, health and care workers should closely examine relevant operational constraints and barriers to action and communicate them to health facility supervisors, relevant governmental organizations, health and WASH clusters, humanitarian partners and organizational authorities (e.g. the United Nations Relief and Works Agency for Palestine Refugees in the Near East [UNRWA]).

Results from needs assessments should be documented and communicated in cases where immediate WASH and IPC interventions are needed but cannot be carried out. The same goes for cases where planning and coordination of suitable temporary alternatives, such as those involving infrastructural remediation, are needed. This can be achieved by:

- facilitating the sharing of information by frontline workers with supervisors and/or technical leads (at health and WASH cluster/sector agencies) in cases requiring immediate attention;
- creating technical working groups with key stakeholders, including members of affected communities;
- evaluating HeRAMS (Health Resources and Services Availability Monitoring System) assessments for WASH and IPC in health-care facilities for gap analysis and planning;
- assessing water supply, sanitation, and hygiene practices; by WASH cluster partners and technical working groups.

Taking no actions on WASH and IPC would likely result in unmitigated transmission of bacterial, viral, fungal, and parasitic infections, including increased risk of development and spread of antimicrobial resistance (AMR) *(6)*, causing severe morbidity and mortality which cannot be identified through syndromic surveillance alone.

2

IPC and WASH considerations for health-care setting

2: IPC and WASH considerations for health-care settings

2.1 Key points

Key IPC and WASH interventions in health-care settings to prevent infectious disease transmission:

- Ensure health and care workers, patients, family members and visitors have access to safe water, sanitation and perform hand hygiene when indicated.
- Ensure that health and care workers, patients, family members and visitors wear well-fitting medical masks when experiencing respiratory symptoms.
- Ensure workers in health-care settings adhere to proper practices related to cleaning and disinfection of the environment.

2.2 Hand hygiene

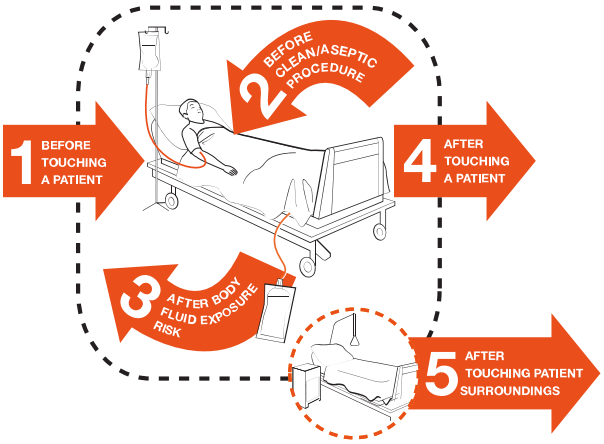
Hand hygiene is a first line of defense against the transmission of infectious diseases within a healthcare setting *(2, 5, 7)*. Hand hygiene should be performed according to the WHO's Five Moments of Hygiene[2], alternate options for hand hygiene products can be considered if preferred hand-hygiene products are not available (Table 1).

Table 1. Hand hygiene.

Hand hygiene (WHO recommendations)	Alternative options when preferred hand-hygiene products are not available
• Hand hygiene should be performed with soap and water or alcohol-based handrub according to the WHO Five moments for hand hygiene *(7, 8)* to protect the health of patients, family members and visitors: before touching a patient, before cleaning/aseptic procedures, after body-fluid exposure risk, after touching a patient, after touching patient surroundings (Figure 1). • Hand hygiene should also be performed with soap and water or alcohol-based handrub after using the toilet and before handling food (refer to Annex 2 for personal hygiene messages). • At least two handwashing stations should be provided in wards with 20 beds *(5)*, located to maximize access across beds during patient care.	1. **If sinks are not available in-patient areas, Veronica buckets can be installed to provide water for hand hygiene close to the point of care *(9)*.** Alternatively, a handwashing basin, soap and a jug of clean water may be placed on a trolley used for ward rounds to encourage handwashing as often as needed between patient contacts (refer to Annex 4 on visual aid for handwashing and handrub technique). 2. **When neither soap and clean water nor alcohol-based handrub is available, the following options can be considered:** • Sodium hypochlorite may be added to water achieving an end formulation of 0.05% sodium hypochlorite for temporary use in dispenser containers for hand hygiene *(10)*. • Note that a sodium hypochlorite solution will inactivate when exposed to open air and organic materials. If this method is used during supply shortages, it is recommended that the solution be prepared in small batches daily and dispensed from closed containers. • Note also that sodium hypochlorite added to water with a high saline content (seawater) is also an option as long as an end formulation of 0.05% sodium hypochlorite is achieved. Similarly, other sources, such as rainwater, may be considered *(11)*. • Consider using other hand hygiene products that have antimicrobial properties, such as waterless "no-rinse" hand soaps.

[2] Advice on hand hygiene practices and techniques, as well as the minimum requirements for sustained practice in emergency health-care settings, are included in the Sphere handbook, WHO's Essential environmental health standards in health care settings and the WHO guidelines on hand hygiene in the health care setting. (Source(s): The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, fourth edition, Sphere Association: Geneva; 2018. [Website]. (www.spherestandards.org/handbook); Adams, John, Bartram, Jamie & Chartier, Yves. Essential environmental health standards for health care / edited by John Adams, Jamie Bartram, Yves Chartier. Geneva: World Health Organization; 2008. https://iris.who.int/handle/10665/43767; World Health Organization & WHO Patient Safety. WHO guidelines on hand hygiene in health care. Geneva: World Health Organization; 2009. https://iris.who.int/handle/10665/44102)

Figure 1. WHO's Five moments for hand hygiene *(7, 8)*.



2.3 Risk assessment

Health and care workers should perform a point-of-care risk assessment to determine their risk of exposure to infectious diseases and to select the appropriate personal protective equipment (PPE) to mitigate this risk (Table 2). Health and care workers should ensure that donning and doffing of PPE is performed in designated areas.

Table 2. Example of a risk assessment and the required personal protective equipment.

Risk assessment of patient	Required personal protective equipment (PPE)
Signs and symptoms of respiratory infection (cough, fever/increased body temperature, sneezing or runny nose).	*Health and care worker:* • Perform **hand hygiene** before and after using PPE, following the Five moments for hand hygiene practices outlined in Section 2.2 *(3, 7, 8)*. • Wear a **medical mask** before entering the patient's environment *(4)*. • Wear additional PPE if indicated based on a risk assessment (e.g. if care includes touching the patient) *(4)*. *Patient:* • Wear a mask, if tolerated, for source control *(4)*. - No mask is to be worn by children under 5 years of age. • Practice respiratory etiquette (refer to Annex 2), followed by hand hygiene after contact with respiratory secretions (blowing nose, sneezing, coughing) to reduce the spread of infection.
Signs and symptoms of diarrhoea, incontinence of stool and/or vomiting.	*Health and care worker:* • Perform **hand hygiene** before and after using PPE, in addition to the Five moments outlined in Section 2.2 *(3, 7, 8)*. • Wear **gloves and gown** before entering the patient's environment *(4)*. - Consider a medical mask and eye protection if risk of generating splashes or sprays of body fluids. *Patient:* • Ask the patient to wash hands, if feasible. Note: Soap-and-water handwashing is the preferred method for hand hygiene when hands are visibly soiled, for the effective removal or deactivation of pathogens on hands.

Risk assessment of patient	Required personal protective equipment (PPE)
Signs and symptoms of rash on face or body.	*Health and care worker:* • Perform **hand hygiene** before and after using PPE, in addition to the Five Moments outlined in Section 2.2 (Figure 1) *(3, 7, 8)*. • Wear a **filtering facepiece respirator** before approaching the patient *(4)*. • Wear additional PPE if indicated based on a risk assessment (e.g. direct contact with skin lesions) *(4)*. *Patient:* • Wear mask for source control, if tolerated. - No mask is to be worn by children under 5. • Practice respiratory etiquette and hand hygiene after contact with respiratory secretions (blowing nose, sneezing, coughing), to reduce the spread of infection. 
Signs of open wound or non-intact skin, blood, or body fluid exposure risk.	*Health and care worker:* • Perform **hand hygiene** before and after using PPE, in addition to the Five moments outlined in Section 2.2 *(3, 7, 8)*. • Wear **gloves** when caring for non-intact skin, open wound or before any anticipated exposure to blood and body fluids *(4)*. • Wear additional PPE if indicated based on a risk assessment (e.g. direct contact with patients). 
• Risk of splash of blood or body fluids; • Handling buckets or bedpans containing watery or bloody stool or vomit; • Cleaning large volume of blood or body fluids in patient environment; • Changing/handling heavily soiled linens.	*Health and care worker:* • Perform **hand hygiene** before and after using PPE, in addition to the Five moments outlined in Section 2.2 *(3, 7, 8)*. • Wear a **gown or apron, gloves, medical mask and eye protection** before approaching the infectious risk *(4)*. 

2.4 Screening, triage and isolation (patient placement)

Patients should undergo screening[3] at point of entry to the health setting based on clinical presentation (syndromic surveillance) and be isolated (separated) if they meet the clinical criteria for suspected infectious diseases. Screening, along with the implementation of standard and transmission-based precautions, as outlined in national and subnational infection control guidance, reduces the risk of transmission within the health-care setting.

1. The following are signs and symptoms of illness that should be screened for in a health-care setting:
    - Acute respiratory infections (cough, sneezing, sore throat, fever/increased body temperature, headaches, fatigue, body aches and pains, and runny nose)
    - Skin rash (on the face or body)
    - Acute gastrointestinal illness (diarrhoea, nausea, vomiting)

Triage should be implemented at the earliest possible opportunity to manage limited resources and provide timely support to individuals presenting with critical care needs[4]. If neither screening alone nor screening and isolation is feasible, other risk mitigation strategies may be considered (Table 3).

Table 3. Risk mitigation when neither screening nor isolation is feasible.

Scenario 1 Neither screening nor isolation is feasible	**Scenario 2** Screening **is not** feasible, **but** isolation is possible
• Due to a lack of available isolation space, patients may be able to be moved from their current placement within the health facility; however, to mitigate the risk of transmission, the following strategies should be employed: - Before every interaction, health and care workers should perform a point-of-care risk assessment. If a patient shows signs and symptoms of an infectious disease, staff should put on appropriate PPE, as outlined in section 2.3 risk-assessment. - Health and care workers should educate patients about the importance of respiratory etiquette and hand hygiene to prevent the spread of diseases. - Staff should provide patients exhibiting signs and symptoms of a respiratory illness a mask, if tolerated. - In situations where patients are in close proximity to one another and due to a shortage of available single-patient beds, arrange the patients so they sleep with their heads at opposite ends to one another. Additionally, place a physical barrier, such as linens, between patients to reduce the risk of transmission via contact.	• Establish a decision-making framework to assist in prioritizing which patients should be assigned to single-patient isolation rooms. This prioritization is to be based on factors such as the infectiousness of the disease, the mode of transmission, the potential to cause severe illness in others if exposed, and the patient's clinical care needs. • Cohort patients with similar symptoms and diagnoses in one patient area/unit to prevent the spread of disease to others. Maintain a minimum distance of 1 metre between patients or beds *(4)*. • Conduct a space assessment to identify suitable areas for establishing single rooms or areas. • In situations where patients are in close proximity to one another due to a shortage of single-patient beds, arrange patients so they sleep with their heads at opposite ends. Additionally, place a physical barrier, such as linens, between patients to reduce the risk of transmission via contact. • Ensure that health and care workers conduct point-of-care risk assessments to determine whether additional PPE is required or if there is a need to relocate the patient to an appropriate isolation room. • Health and care workers should educate patients about the importance of respiratory etiquette and hand hygiene to prevent the spread of diseases.

[3] Screening: a process in which an individual is evaluated to see whether that person meets a standardized case definition *(4)*.
[4] For more information, refer to the Interagency Integrated Triage Tool: Quick Reference Guide. (Source: Interagency Integrated Triage Tool: Quick Reference Guide. The Lancet; 2021. [Website]. https://www.thelancet.com/cms/10.1016/j.lanwpc.2023.100683/attachment/dafc5097-3e62-4edb-badf-f4e3e24f250a/mmc2.pdf)

2.5 Rational use of personal protective equipment (PPE) and considerations during shortages

In situations where there is a severe shortage of PPE or an anticipated stockout, consider using temporary stand-alone or combination measures to maximize the use of available supplies *(12)*:

1. Extended PPE use (using PPE items for longer than normal or for multiple patient encounters):
    a. Gowns (disposable or reusable) and eye protection may be considered for extended use (wearing continuously for multiple patient encounters), prior to disposal when severe shortages are experienced. Extended-use PPE items should be removed and replaced immediately if they become soiled during use and should be discarded when they are taken off.
    b. Disposable medical masks and filtering facepiece respirators may be used continuously for multiple patient encounters; however, these items must be carefully managed as there is a high risk of self-contamination during their extended use in health-care settings. Additional advice includes:
        i. mask must be changed when wet, soiled or damaged;
        ii. mask must not be touched for adjustment or displacement from the face; if this happens, the mask should be safely removed and discarded; and hand hygiene performed.
    c. Examination gloves should not be used for multiple patient encounters *(13)*.
2. Alternative PPE items (using non-standardized or repurposed products as PPE items):
    a. In the event of a medical masks stockout, the use of non-medical masks (such as cloth masks) may be considered[5].
    b. In the instance of gowns stockout, consider using disposable or launderable aprons, lab coats and patient gowns *(12)*.
    c. In instances of gloves stockout, consider using clean, protective gloves that are used for safety in other industries, such as those used for laboratories and those used in the handling of chemical hazards and food preparation.
3. Reprocessing PPE (using previously worn PPE after decontamination or reprocessing methods):
    a. For example, cotton gowns and eye protection may be decontaminated. To decontaminate a cotton gown, it may be laundered or washed and disinfected[6]. Please see Annex 4 for a visual aid on putting on and taking off PPE.

2.6 Environmental cleaning

Environmental contamination in health-care settings plays a major role in the transmission of infections[7].

Ideally, individuals performing cleaning should systematically clean surfaces using the general principles of cleaning from clean to dirty and from high surfaces to low surfaces *(14)*. For higher-risk areas (e.g. spaces where patients with epidemic-prone infections are placed), use disposable towels only and ensure the disposal of all used towels as contaminated waste before moving to another patient space. If disposable towels are not available, reusable towels can be used if they are cleaned and laundered before use.

[5] Validation of non-medical masks should use essential parameters listed in WHO IPC guideline for COVID-19. (Source: World Health Organization. Infection prevention and control in the context of COVID-19: a guideline, 21 December 2023. Geneva: World Health Organization; 2023. https://iris.who.int/handle/10665/375200)
[6] Using advice listed in the interim guidance, rational use of personal protective equipment for COVID-19 and considerations during severe shortages. (Source: World Health Organization. Rational use of personal protective equipment for COVID-19 and considerations during severe shortages: interim guidance, 23 December 2020. Geneva: World Health Organization; 2020. https://iris.who.int/handle/10665/338033)
[7] Advice on cleaning practices and technique as well as considerations for laundry and linen management are included in the WHO training document Environmental cleaning and infection prevention and control in health care facilities in low- and middle-income countries. (Source: World Health Organization. Environmental cleaning and infection prevention and control in health care facilities in low- and middle-income countries: trainer's guide. Geneva: World Health Organization; 2020. https://iris.who.int/handle/10665/366379)

Where there is limited stock of hospital-approved disinfectants, prioritize the disinfection of high-touch surfaces, items in proximity to patients who have higher susceptibility to infections (e.g. immunocompromised patients) and items in areas that are regularly exposed to significant amounts of blood or other body fluids (e.g. emergency rooms).

At minimum patient care areas should be cleaned and disinfection twice per day and practices adjusted as needed (e.g. depending on number of patients using the space [Table 4]) and the suggested cleaning and disinfection products that can be used to clean the patient care area (Table 5).

Environmental surfaces should be cleaned and disinfected immediately whenever they become visibly soiled or if there is a spill of body fluid (e.g. blood, stool, drainage). Please see Annex 4 for visual aid on cleaning and disinfection practices.

Table 4. Cleaning and disinfection areas and frequency in health-care settings.

Patient area	Frequency	Additional guidance
Screening/triage area.	• At least twice daily.	• Focus on high-touch surfaces, then floors (last).
Inpatient rooms/cohort occupied.	• The frequency of cleaning inpatient rooms should be increased to accommodate any increased number of patients using the space. • Minimum: At least twice daily, preferably three times daily, in particular for high-touch surfaces.	• Focus on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible; then floors (last).
Patient bathrooms/toilets.	• The frequency of cleaning inpatient rooms should be increased to accommodate any increased number of patients. Using the toilet. • Minimum: Private patient room toilet: at least twice daily. Shared toilets: at least three times daily.	• High-touch surfaces, including door handles, light switches, counters, faucets, then sink bowls, then toilets and finally floor (in that order). • Where feasible, avoid sharing toilets between staff and patients *(14, 15)*.

When hospital-approved disinfectants are unavailable, it is advisable, at a minimum, to use water, detergent, or sodium hypochlorite (household bleach is acceptable) to physically cleanse surfaces, using clean cloths (like microfiber or disposable towels) and manual friction (scrubbing technique) to manually eliminate microorganisms from surfaces.

Table 5. Suggested cleaning and disinfectant products.

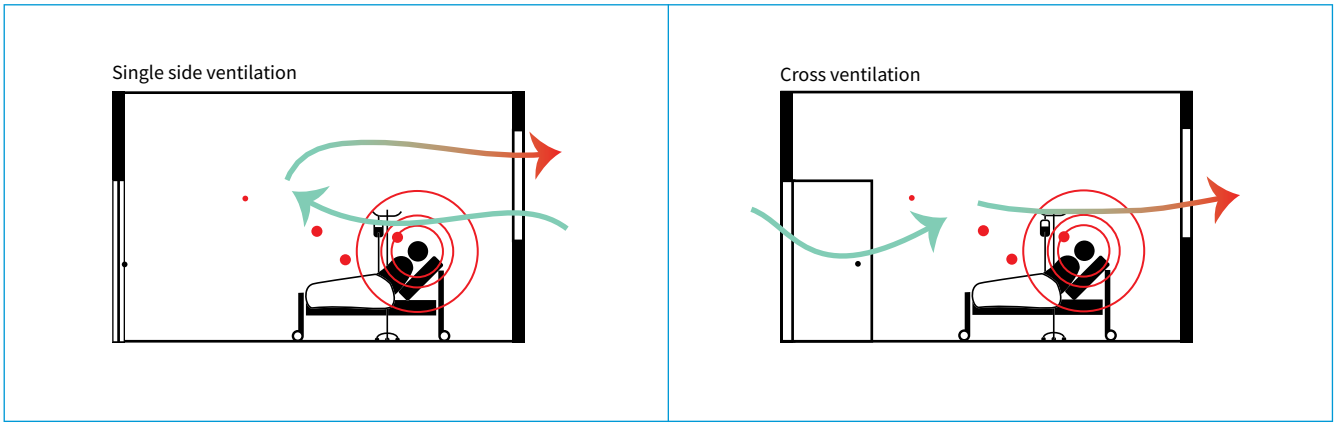
Cleaning products	Disinfectants
• Liquid soap. • Detergents *(15)*.	• Low-level disinfection is generally adequate for environmental cleaning. • Common low- and intermediate-level disinfectants that can be used for environmental surfaces in health-care settings include: - alcohol (ethyl or isopropyl 60-80%) – alcohol-based handrub solutions may also be used for surface disinfection purposes; - hydrogen peroxide; - quaternary ammonium compounds; - chlorine-releasing agents (e.g. bleach).

2.7 Ventilation

Ensuring adequate ventilation in patient-care areas plays a key role in preventing transmission of infections *(16)*.

- Natural ventilation is achieved by opening windows and/or doors to facilitate the intake of fresh air and the exhaust of stale air[8].
- If feasible, maintain adequate ventilation by ensuring that airflow is not obstructed by fixtures, insulation or screens. It is preferable to ensure that air flows continuously from different directions (e.g. through both open door and open window located on different sides of the room) rather than through an opening on only one side (e.g. window alone) (Figure 2).

Figure 2. Natural ventilation for IPC in health-care settings.



2.8 Water supply, quantity and quality

Water availability is critical to being able to adhere to IPC measures and maintaining a sufficient amount of water is critical (Table 6). At minimum, 2.5-3.0 litres/person/day of safe drinking-water are required for survival *(2)*. Depending on climatic and individual needs, that quantity can go up *(17)*. According to WHO guidelines, 40-60 L/patient/day are required for inpatients and 5 L/patient/day for outpatients (Table 6). To safeguard supplies, consider using saline water for flushing toilets, cleaning, and anal cleansing, as this is the practice typically used in the Region. Ensure provision of safe drinking-water as per national guidelines or WHO Guidelines for drinking-water quality[9] and with minimum storage capacity of five days.

Table 6. Minimum water quality requirements in health care settings *(2,5)*.

Minimum emergency water quantities for various uses in health facilities	Litres/patient/day
Drinking-water requirement (dependent on climatic and individual needs) *(2)*.	2.5-3.0
In-patient department/hospitalization (IPD/hospital).	40
Emergency Room (ER).	10
Outpatient Department.	5
Flushing toilets per user (conventional flushing toilets with sewer).	40
Flushing toilets per user (pour-flush toilets).	5
Anal washing (per person).	2
Basic hygiene practices (per person).	6

[8] See WHO guideline for natural ventilation for infection control in health care settings for more information. (Source: World Health Organization. Natural ventilation for infection control in health care settings. Geneva: World Health Organization; 2009 https://iris.who.int/handle/10665/44167)
[9] Refer to the WHO guidelines for water quality for additional details. (Source: World Health Organization. Guidelines for drinking-water quality: fourth edition incorporating first addendum, 4th ed + 1st add. Geneva: World Health Organization; 2017 https://iris.who.int/handle/10665/254637)

Since centralized water supply systems may not be functioning, localized water treatment should be undertaken employing point-of-use or point-of-entry water treatment (e.g. chlorine tablets or solutions, filters). In addition, pool testers and turbidity tubes should be made available for measuring pH, free residual chlorine (FRC) and turbidity levels in water to ensure it is properly disinfected. To ensure safe water access during a public health emergency, FRC levels of 0.5 mg/L (for water with a pH of <8 and turbidity <nephelometric turbidity units (NTUs) or 1.0 mg/L (for water with a pH >8 and turbidity >5 NTU) are recommended. The broad aim is to ensure FRC levels are 0.5 mg/L to ensure there is a residual at delivery/use and to prevent re-contamination. In contexts where there are no point-of-use supplies (for example, Aquatabs), the health setting will need to adapt and examine alternatives, such as bottled water (with appropriate solid-waste management), and/or link with a water vendor (who has reverse-osmosis equipment and chlorination supplies) for drinking-water only[10].

2.9 Sanitation and wastewater management

- Maintain gender-disaggregated toilets for 1 toilet/20 users, and separate toilets for staff with minimum twice-daily cleaning, disinfection and refilling of hygiene supplies, including those used for handwashing *(2, 5, 18)*.
- Handwashing stations or portable/Veronica buckets (section 2.2) should be installed within five metres of the toilets – for both immediate and longer-term solutions with each toilet *(5, 18)*.
- All toilets must be equipped with safety locks that can be activated from the inside, and all fittings should be heavy-duty/vandal-proof *(18)*.
- Regular minimum cleaning/maintenance contracts are required for all toilets *(18)*.
- Wastewater from sinks, showers, and toilets with water discharge (sewage) must be connected to sewage systems or on-site disposal through septic tank/cesspit and soakaway pit. Lime use for stabilization of sludge in treatment units or in situ disinfection of wastewater can be considered if resources are available *(19)*.

2.10 Waste management and sharps containment

Safe management of waste and sharps can protect both health and care workers and patients by reducing the risk of transmission from recognized and unrecognized sources *(3)*. Health and care workers should follow standard precautions for sharps and waste management whenever feasible and consider safe alternatives when unable (Table 7).

[10] Provide water filtration or treatment units from the list of technologies evaluated by WHO (Source: Products that meet WHO performance criteria and list of all products evaluated. Geneva: World Health Organization [Website] https://www.who.int/tools/international-scheme-to-evaluate-household-water-treatment-technologies/products-evaluated/)

Table 7. Waste management recommendations and alternative options.

Medical waste management (WHO recommendations)	Alternative options when standard SOPs cannot be implemented
• Waste should be segregated at point of generation; refer to waste management in Annex 3. • Take precautions when using or when working around sharp devices. Handling of sharps and disposal should follow standard precautions (sharps safety). Provide puncture-proof sharps container for safe disposal of sharps waste *(20)*. • Ensure that all disposable equipment is placed in designated/labelled waste container and that waste bags are available for safe collection of waste. • Designated waste storage zone should be established for the secure and effective storage away from patients and public. • Waste disposal should be undertaken by staff wearing full PPE. • Apply protocols of hazardous waste management and inform workers about safety precautions. Provide the following PPE based on the risk assessment of dealing with hazardous waste *(20)*: a. Gloves with inner and outer layers that are chemical-resistant/gloves that protect against thermal risks. b. Chemical-resistant/fire-resistant boots, c. (disposable) fire-resistant/chemical-resistant suit – avoid wearing synthetic clothing, respiratory protection (respirators), goggles and face mask. • In larger centres, incinerators are used to properly dispose of sharps and infected waste, especially that produced by diagnostic laboratory services, radiological diagnosis and treatment facilities, pharmacies.	Waste management during triage and classification of patients: all waste generated during this stage, without exception, is to be stored in containers, preferably in red bags, that are properly labeled as "bio-contaminated waste." Direct contact with such waste must be avoided. Waste management during medical activities: • Well-managed, on-site burial of waste may be appropriate for small health centres or field hospitals. • Consider using interim waste-disposal options for the safe disposal of waste such as De Montfort Mark 7 and drum incinerators or burning in a pit and burying in an ash pit as a temporary measure if other disposal options are not available. • To effectively burn wet waste, both solid fuel (e.g. wood) and liquid accelerant (e.g. diesel or kerosene) will be needed. The fire will need to be established before adding the wet waste and dry waste, alternating between the two to maintain a temperature high enough to kill all infective pathogens. • Several methods can be used to burn this waste. The most common and easiest to construct is a burn pit. Simple 6-foot x 6-foot x 6-foot pits are sufficient for small amounts (e.g. waste from a six-bed unit). For larger volumes of waste, a more sophisticated burn pit will need to be built, one that gives more consideration to air supply and ventilation and offers protection from the elements during the rainy season. Sharps waste should be disposed of in a dedicated sharps pit. Bury the sharps waste in the pit or bury the drums in dedicated sharps pits. For larger pits, it may be necessary to install flues and chimneys. They can be made of corrugated iron that has been perforated to allow entry of air to the bottom of the pit; these can ensure the supply of clean air is sufficient to maintain the desired amount of heat and intensity. • To ensure that no one falls accidentally into the pit, a barrier will need to be constructed around the top. • Consider other measures and coordinated solutions, to be agreed to by actors in the field and by authorities, such as demarcation of a space to be used in the medium term as a dumping site by all, or other options.

2.11 Patient health education on IPC

Where possible educate patients on IPC measures especially those who are ill or who are at high risk of infection, focus on informing patients on transmission risk and how to stop the spread of disease (Table 8). Patient education can be particularly important in cases where self-management will be required to ensure compliance with basic hygiene and prevention measures.

Table 8. Patient health education on IPC.

Condition identified	Educational advice	Supply distribution
Open wound/surgical wound	Wound care; risk of infection in exposed area; first-aid dressing technique; hand hygiene	• liquid antiseptic • gauze roll/wrap • liquid waterless soap or sanitizer
Respiratory infection, chickenpox, meningitis, suspected measles	Respiratory hygiene and etiquette; medical mask usage; hand hygiene; minimize contact or isolate away from others	• medical mask • liquid waterless soap or sanitizer
Diarrhoea	Risk of faecal-oral transmission; hand hygiene	• liquid waterless soap or sanitizer

2.12 Safe management of dead bodies

There is no evidence to suggest that the presence of dead bodies inherently leads to disease or epidemics *(21)*. The bodies of people whose deaths were caused by traumatic events such as warfare do not pose a health hazard. They may pose a health risk only in cases where an infectious disease was the cause of the mortality *(21)*.

Health and care workers and other persons involved in handling the deceased should follow standard precautions according to risk-assessment and existing national/subnational/local protocols for managing and handling the bodies of patients who have died of an infectious disease.

The dignity of the dead, their cultural and religious traditions and their families should be respected and protected throughout, balancing the rights of the family and the risks of exposure to infection.

2.13 IPC essential supply list

It is crucial for health-care settings to utilize IPC supplies to mitigate the risk of disease transmission. Please refer to Annex 1 for a list of IPC supplies commonly used to implement the IPC measures outlined in this document. In cases where access to supplies is challenging, users are encouraged to review and select supplies that are readily available and easy to procure.

3

WASH and IPC considerations for shelters and congregate settings

3: WASH and IPC considerations for shelters and congregate settings

3.1 Key points

Key WASH and IPC interventions for shelters and congregate settings in Gaza to prevent infectious disease transmission:

- Ensure residents have access to safe water.
- Ensure residents are provided with access to hygiene kits and receive key public health messages education on hygiene promotion.
- Ensure containment and safe disposal of human excreta to reduce the risk of faecal-oral transmission of disease.

During this emergency, large numbers of people have become displaced, requiring alternative accommodation in shelters, schools, hospitals, or temporary accommodations such as tents and informal shelters. New exposure to persons outside of familial structures increases the risk of infectious disease outbreaks. Even during conflicts, communities should strive to put in place conditions and best practices that mitigate the risk of disease transmission. Nonetheless, the implementation of hygiene, public health and social measures as well as IPC measures can present logistical challenges due to displacement, evacuation of residents and crowding in shelters.

3.2 Water supply, storage, and quality

- When municipal water supply is not available, use water dispensers, bottled water, water trucking, etc.as a temporary measure to access safe drinking-water. Use large plastic bottles to reduce the amount of plastic, which can be difficult to manage in this context. It is important to provide clean water storage containers with covers.
- Point-of-use water treatment: Provide approved, point-of-use water treatment as per WHO's evaluation *(22)*, which includes household waste treatment filters or chlorine tablets such as *Aquatabs* (refer to Annex 3 for use of Aquatabs).
- To mitigate consumption of non-potable water, ensure drinking-water containers are clearly labelled.
- If chlorine is available, ensure that the water in communal water tanks in shelter and congregate settings is chlorinated, and that free residual chlorine (FRC) levels measure 0.5 mg/L (for water with a pH of <8 and turbidity < NTUs) or 1.0 mg/L(for water with a pH >8 and turbidity >5 NTU). The broad aim is to ensure that FRC levels are 0.5 mg/L to ensure there is a residual at delivery/use and to prevent re-contamination (see Annex 3 for preparation of chlorine solutions).
- In cases where there is limited access to and availability of drinking-water, seawater or saline water can be used for cleaning, toilet flushing, bathing, etc. Doing so will save on supplies of drinking-water. In such cases, inspect areas where seawater is collected to ensure that it is safe to be used for these purposes. WHO has not proposed a health-based threshold for salinity in drinking-water as the contribution from drinking-water to daily sodium intake is small *(23)*; however, it is unacceptable for drinking.
- The same principles would apply to community settings as outlined in the previous section covering water, sanitation, hygiene, and IPC measures for the protection of workers providing services in communal living facilities.

3.3 Hygiene kits and promotion

- Provide family/emergency/household hygiene kits with essential personal and environmental cleaning supplies[11] to maintain personal and environmental hygiene[12].
- Identify community volunteers to engage communities for hygiene promotion and to deliver key messages (see Annex 2).

3.4 Excreta management

Management of human waste is critical to reduce the risk of infectious disease in the community, when unable to follow global standards, alternative mitigation measures can be employed (Table 9).

Table 9. Sphere standards and alternative sanitation options.

Sanitation principles as per Sphere standards	Alternate options
• The toilet/latrine-to-user ratio: 20 users / toilet and 50 users /shower *(2, 5)*. • Handwashing stations with soap and water should be accessible within 5 metres of toilet *(2, 5)*. • A toilet connected to a water supply and sewer network is the ideal option; if this is not possible, the minimum would be to establish defecation sites, build communal latrines/ toilets, and seek to maintain the best possible sanitation and hygiene conditions. • Prevent defecation near any water source, water storage and water treatment facility.	• Considering the current lack of supplies and space, target 100 users/toilet. • Where there is a risk of overcrowding and limited availability of sanitation facilities, clearly mark places for safe excreta disposal or, if buckets are used, of manholes. Deliver key messages on handwashing after touching excreta. • Establish deep trench latrines and locate them away from water sources. Toilets should not only be accessible, but their placement should take into consideration the safety and security of their users (i.e. children and older people should be able to use them safely and they should be equipped with safety features such as locks and lighting that would minimize the risk that users would be vulnerable to gender-based violence). • Pay community workers to clean and clear standing wastewater around the shelters. • In cases where hospitals and schools are being used as shelters and are overcrowded, increase the number of toilets or latrines outside them, if space is available. • Detailed guidance is available on menstrual hygiene management for women in the Gaza Strip *(24)*. • Make saline water available for anal cleansing, separate from water for flushing. Label everything clearly. • Continuous advocacy for emergency/chemical mobile latrines to remove it from rejected list. • Provide supplies (biodegradable plastic bags, cleaning materials and soap) and ensure maintenance and collection services for packet and bucket or elevated latrines when there are no safer sanitation options[13].

See Annex 4 on visual aid for cleaning and disinfection of toilets.

[11] For additional details see the hygiene operational file (Source: WASH Cluster [Website] https://docs.google.com/spreadsheets/d/1NUNGCV0rjVAWZv_GNtuVJAJ6A28a_qzM/edit#gid=24111585)

[12] Refer to the WASH cluster family emergency hygiene kit and inter-cluster menstrual hygiene strategy for Gaza. (Source(s): Menstrual Health Management Strategy: Gaza Strip. New York City: United Nations Population Fund; 2023 https://arabstates.unfpa.org/en/publications/menstrual-health-management-strategy-gaza-strip; WASH Cluster [Website] https://docs.google.com/spreadsheets/d/1NUNGCV0rjVAWZv_GNtuVJAJ6A28a_qzM/edit#gid=24111585)

[13] Refer to the US Centers for Disease Control and Prevention, Potential Sanitation Solutions During an Emergency Response. (Source: Potential Sanitation Solutions During an Emergency Response. Atlanta: US Centers for Disease Control and Prevention [website] https://www.cdc.gov/healthywater/global/sanitation/sanitation-emergency-response.html)

3.5 Solid waste management

- Ensure proper disposal of child diapers and other diapering supplies in waste bins. Consider reuse of diapers by washing the reusable diapers if water is available.
- Provide solid waste collection bags and bins for disposal of used menstrual hygiene supplies[14].
- If solid waste collection and disposal in landfill is not available, dig a pit for solid waste disposal (burn and bury). Provide >100-litre waste bin with waste bags per 50 people and provide small waste bags (1-5 litres) bags for disposal of sanitary pads *(2, 5)*.
- Engage community members to collect waste on a cash-for-work basis and transport that waste on carts to disposal sites or provide support to municipalities to do so. Provide PPE (heavy-duty gloves, heavy-duty shoes, apron and mask) to community workers collecting and transporting the waste. Provide waste bags to collect waste and dig pits for disposal. Ensure that hand hygiene can be performed by making available handwashing facilities (Veronica buckets) equipped with water and soap.
- If shelters do not have access to disposal sites, establish pits at least 15 metres from the shelters and burn waste in them. Ensure that the pits are constructed so that children cannot accidentally fall into them.

3.6 Ensuring safe shelters

- Establish well-ventilated sleeping areas, ensuring a minimum of 3.5 m^2 of living space per person *(2)*, excluding areas for cooking, bathing, and sanitation, to prevent overcrowding.
- Ensure at least 1 metre of distance between beds/individual sleeping areas. If that is not possible, consider arranging sleepers to be positioned head-to-toe.
- Clean bedding and the living/sleeping spaces whenever it is possible to do so.
- When safe to do so, open windows to improve ventilation.

3.6.1 Screening and isolation

- Screen persons residing in shelters for communicable diseases using standardized screening tools (e.g. WHO's Early Warning, Alert and Response System (EWARS) or other tools that enable case identification); frequency is dependent on feasibility.
- Shelters should have a plan in place to reduce the spread of disease among identified ill residents[15].

3.6.2 Personal protective equipment (PPE)

- Health and care workers should perform a point-of-care risk assessment before providing care to persons residing in the shelter. If persons show signs or symptoms of infectious disease, health and care workers should put on appropriate PPE, based on a risk assessment.

[14] Refer to the menstrual health management strategy for the Gaza Strip. (Source: Menstrual Health Management Strategy: Gaza Strip. New York City: United Nations Population Fund; 2023 https://arabstates.unfpa.org/en/publications/menstrual-health-management-strategy-gaza-strip)
[15] EWARS in a box: mobile user guide or EWARS in a box: quick start guide (Source(s): World Health Organization. EWARS in a box: mobile user guide. Geneva: World Health Organization; 2023. https://iris.who.int/handle/10665/370282); World Health Organization. EWARS in a box: quick start guide. Geneva: World Health Organization; 2023. https://iris.who.int/handle/10665/372180)

References

References

1. oPt emergency Situation Update. Issue 22. Cairo: WHO Regional Office for the Eastern Mediterranean; 2024 (https://www.emro.who.int/images/stories/Sitrep_-_issue_22.pdf?ua=1, accessed 4 February 2024)
2. The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, fourth edition, Sphere Association: Geneva; 2018. (www.spherestandards.org/handbook, accessed 13 January 2024)
3. Standard precautions for the prevention and control of infections: aide-memoire. World Health Organization, 2022 (https://iris.who.int/handle/10665/356855, accessed 13 January 2024)
4. Transmission-based precautions for the prevention and control of infections: aide-memoire. Geneva: World Health Organization; 2022 (https://iris.who.int/handle/10665/356853, accessed 13 January 2024)
5. Adams J, Bartram J, Chartier Y, editors. Essential environmental health standards for health care. Geneva: World Health Organization; 2008 (https://iris.who.int/handle/10665/43767, accessed 13 January 2024)
6. Moussally K, Abu-Sittah G, Gomez FG, Abou Fayad A, Farra A. Antimicrobial resistance in the ongoing Gaza war: a silent threat. The Lancet. 2023 Nov 25;402(10416):1972-3. doi: 10.1016/S0140-6736(23)02508-4
7. World Health Organization & WHO Patient Safety. WHO guidelines on hand hygiene in health care. Geneva: World Health Organization; 2009 (https://iris.who.int/handle/10665/44102, accessed 13 January 2024)
8. Your 5 Moments for Hand Hygiene. Geneva: World Health Organization [Website] (https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/infection-prevention-and-control/your-5-moments-for-hand-hygiene-poster.pdf?sfvrsn=83e2fb0e_6, accessed 13 January 2024)
9. WASH in Health Care Facilities (2023). WASH FIT portal | WASH in Health Care Facilities [web site]. (WASH FIT Fact Sheets | WASH in Health Care Facilities (https://www.washinhcf.org/))
10. Recommendations for the Preparation of Disinfectant Solutions, 11 May 2020. Washington, D.C: Pan American Health Organization; 2020 (https://iris.paho.org/handle/10665.2/52172, accessed 13 January 2024).
11. Considerations for community hand hygiene practices in low-resource situations. Manila: WHO Regional Office for the Western Pacific; 2022 (https://iris.who.int/handle/10665/332382, accessed 13 January 2024)
12. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19): interim guidance, 19 March 2020. Geneva: World Health Organization; 2023 (https://iris.who.int/handle/10665/331498, accessed 13 January 2024)
13. Glove use information leaflet. Geneva: World Health Organization; 2009 (https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/infection-prevention-and-control/hand-hygiene/tools/glove-use-information-leaflet.pdf?sfvrsn=13670aa_10, accessed 13 January 2024)
14. Environmental cleaning and infection prevention and control in health care facilities in low- and middle-income countries: trainer's guide. Geneva: World Health Organization; 2022. (https://iris.who.int/handle/10665/366379, accessed 13 January 2024)
15. Centers for Disease Control and Prevention and Infection Control Africa Network. Best Practices for Environmental Cleaning in Healthcare Facilities in Resource-Limited Settings. Atlanta, Center for Disease Control and Prevention; Cape Town, South Africa: Infection Control Africa Network; 2019 (https://www.cdc.gov/hai/prevent/resource-limited/index.html, accessed 13 January 2024)
16. Natural ventilation for infection control in health care settings. Geneva: World Health Organization; 2009. (https://iris.who.int/handle/10665/44167)

17. Howard G, Bartram J, Williams A, Overbo A, Fuente D, Geere J. Domestic water quantity, service level and health, second edition. Geneva: World Health Organization; 2020 (https://iris.who.int/handle/10665/338044, accessed 13 January 2024)

18. WASH in Health Care Facilities (2023). WASH FIT portal | WASH in Health Care Facilities [web site]. (WASH FIT Fact Sheets | WASH in Health Care Facilities (https://washinhcf.org))

19. Sozzi E, Fabre K, Fesselet JF, Ebdon JE, Taylor H. Minimizing the risk of disease transmission in emergency settings: novel in situ physico-chemical disinfection of pathogen-laden hospital wastewaters. PLOS Neglected Tropical Diseases. 2015 Jun 25;9(6):e0003776. doi: 10.1371/journal.pntd.0003776

20. Prüss A, Emmanuel J, Stringer R, Pieper U, Townend W., et al. Safe management of wastes from health-care activities, second edition. Geneva: World Health Organization; 2014. (https://iris.who.int/handle/10665/85349, accessed 13 January 2024)

21. Disposal of dead bodies in emergency conditions [website]. Geneva: World Health Organization; 2013(https://cdn.who.int/media/docs/default-source/wash-documents/who-tn-08-disposal-of-dead-bodies.pdf?sfvrsn=530b5835_4&download=true, accessed 13 January 2024)

22. Evaluating household water treatment options: health-based targets and microbiological performance specifications. Geneva: World Health Organization; 2011 (https://iris.who.int/handle/10665/44693, accessed 13 January 2024)

23. Guidelines for drinking-water quality: fourth edition incorporating the first and second addenda, 4th ed + 1st add + 2nd add. Geneva: World Health Organization; 2022 (https://iris.who.int/handle/10665/352532, accessed 13 January 2024)

24. Menstrual Health Management Strategy: Gaza Strip. New York City: United Nations Population Fund; 2023 (https://arabstates.unfpa.org/en/publications/menstrual-health-management-strategy-gaza-strip, accessed 13 January 2024)

Annex 1

IPC supply list

Annex 1: IPC Supply List

Supply list[16]

- Alcohol-based handrub (ABHR) with alcohol or ethanol, concentration range of 60-80% (v/v)
- Soap (liquid, solid, leaf or powdered form of soap - liquid soap is preferred)
- Scrubs
- Gowns meeting minimum technical standard of any of AAMI PB70, ASTM F3352, EN 13034-type PB, or equivalent
- Aprons meeting minimum technical standard of any of EN 1342, D6400, EN ISO 13688, ASTM D6400, or equivalent
- Eye protection (goggles or face shield) meeting minimum technical standard of EN 166, ANSI/ISEA Z87.1, or equivalent
- Medical masks meeting minimum technical standard of any of ASTM F2100 Level 1, EN 14683 Type IIR, or YY 0469
- Respirators (filtering facepieces) meeting minimum technical standard of any of NIOSH N95, EN 149 FFP2, or GB 19083
- Gloves (medical and surgical) meeting minimum technical standard of EN 455, or any of ASTM D6319/D3576/D5250/D6977
- Sterile surgical gloves (elbow length), which can be used during deep-cavity procedures, meeting minimum technical standard of either EN 455 or ASTM D3577; with sterility assessed using EN ISO 11607, or equivalent.
- Gloves, thick/utility: (domestic, reusable, thick rubber gloves; chemical-resistant; heat-resistant if for incineration)
- Safety footwear: (durable; reinforced toe; slip-resistant tread; safety footwear required for incineration only and rubber (gum) boots for all other environmental cleaning tasks)
- Head covering/surgical caps
- Detergent
- Disinfectant (liquid or granulated; either pre-mixed or for end-user preparation); depending on availability, any of: sodium hypochlorite, alcohol/ethanol, hydrogen peroxide, quaternary ammonium compounds OR cannisters of single-use wipes pre-impregnated with disinfectant solutions
- Buckets for use with detergent, disinfectants and rinse water
- Mixing utensils (for detergent and disinfectant preparation)
- Hand towels (disposable/reusable)
- Paper towelettes, disposables (absorbent paper, single use)
- Cloths (cotton)
- Dustpan
- Floor brush (for spot cleaning of floors, plastic or metal)
- Mop stick + mop heads

[16] This list serves as a reference for the IPC supplies for procurement consideration with reference to the operational Guidance-Essential Supply List for Infection Prevention and Control in Health Care facilities and Technical specifications of personal protective equipment for COVID-19: Interim guidance. (Source(s): Essential Supply List for Infection Prevention and Control in Health Care Facilities. Washington, D.C.: MOMENTUM, A Global Partnership for Health and Resilience, USAID, US Agency for International Development; 2021 https://pdf.usaid.gov/pdf_docs/PA00XGGJ.pdf; World Health Organization. Technical specifications of personal protective equipment for COVID-19: interim guidance, 13 November 2020. Geneva: World Health Organization; 2020. https://iris.who.int/handle/10665/336622)

- Measuring jugs
- Chlorine test kit
- Bin + plastic bags (infectious waste and non-infectious waste). Bin should be plastic or metal with lid; preferably with step/pedal function
- Puncture-and leak-proof sharps containers for used needles and syringes
- Toilet brush

Annex 2

Hygiene kits, hygiene promotion messages and food safety

Annex 2: Hygiene kits, hygiene promotion messages and food safety

Hygiene kits[17]

- Hand hygiene supplies
- Menstrual hygiene supplies[18]
- Cleaning supplies for shelters

Hygiene promotion messages

Respiratory hygiene messages:

- Persons with respiratory symptoms should apply source-control measures, for example, cover their nose and mouth with a tissue or mask when coughing/sneezing; dispose of used tissues and masks and preform hand hygiene after contact with respiratory secretions.

Health-care facilities should:

- Place patients with symptoms of acute respiratory infection at least 1 metre (3 feet) away from others in common areas, if possible.
- Post visual alerts at the entrances to health-care facilities instructing persons with respiratory symptoms to practice respiratory hygiene/cough etiquette.
- Consider supplying hand hygiene materials and masks in common areas and areas used for the evaluation of patients.

Personal hygiene:

- Handwash at critical moments (after using toilet, after touching diapers or faecal matter, before eating, after cleaning households, before food preparation)
- Bathe/shower whenever possible
- Clean living spaces
- Physically distance
- Use masks/PPE where available and appropriate

Food safety

- Follow food safety practices for handling, storage and preparation *(19)*.
- Where food is prepared or served in large amounts (e.g. for health-care or shelter settings), ensure that food handlers follow the practices outlined in WHO's Five keys to safer food manual (see Annex 4).

[17] For additional details see the hygiene operational file (Source: WASH Cluster [Website] https://docs.google.com/spreadsheets/d/1NUNGCV0rjVAWZv_GNtuVJAJ6A28a_qzM/edit#gid=24111585)
[18] Refer to the menstrual health management strategy for the Gaza Strip. (Source: Menstrual Health Management Strategy: Gaza Strip. New York City: United Nations Population Fund; 2023 https://arabstates.unfpa.org/en/publications/menstrual-health-management-strategy-gaza-strip)
[19] For additional information, see Food Handlers Manual. (Source: Food Handlers Manual. Instructor. Washington, D.C: Pan American Health Organization; 2017 https://iris.paho.org/handle/10665.2/34129)

Annex 3

Water quality and waste management

Annex 3: Water quality and waste management

Water quality

- Preparation of chlorine solutions

The following chlorine solutions are required for different WASH and IPC measures in health settings:

Table A3.1. Chlorine solutions according to use.

Chlorine solutions according to use			
Types of chlorine compounds	**Different concentrations of chlorine use**		
	0.05%	**0.2%**	**2%**
HTH (70% active chlorine)	0.7 grams in 1 litre of water or half tablespoon in 10 litres of water	3 grams in 1 litre of water or 2 level tablespoons in 10 litres of water	30 grams in 1 litre of water or 2 level tablespoons in 1 litre of water
Sodium hypochlorite (bleach) at 5% active chlorine	10 ml of bleach in 1 litre of water or 1 tablespoon in 1 litre of water	40 ml of bleach in 1 litre of water or 4 tablespoons in 1 litre of water	400 ml of bleach in 1 litre of water or 2 cups in 1 litre of water
Use	Washing hands (when soap and ABHR are not available), utensils and dishes, PPE (gloves, apron, goggles, etc.)	Disinfection of all parts of the wards, floors, latrines, kitchen, shower/bathing units, beds or cots, patient's bedding and linens, clothing, utensils, containers and dishes, waste containers and covers, vehicles used for transporting patients	Disinfection of vomit and stool. Disinfection of dead bodies
Precautions	Solution must be changed every day and protected from heat and light	Use with gloves Solution must be changed every day and protected from heat and light	Use with gloves Solution must be changed every two days and protected from heat and light

Source: Global Task Force on Cholera Control. Technical Note: Water, Sanitation and Hygiene and Infection Prevention and Control in Cholera Treatment Structures. Geneva: CTFCC; 2019.

Different concentrations of Aquatabs for specified quantities of water

Table A3.2. Different types of Aquatabs.

Chart of different types of Aquatabs for disinfection of water in specified quantities	
NaDCC content per tablet	**Litres Of water treated per tablet**
• 8.5 mg	• 1 litre of water
• 33 mg	• 5 litres of water
• 67 mg	• 10 litres of water
• 167 mg	• 20 litres of water
• 1.67 g	• 200 litres of water
• 2.5 g	• 370 litres of water
• 8.68 g	• 1000 litres of water
• Aquatab granules	• 1000+ for all volumes greater

Source: https://www.aquatabs.com

Messages on use of Aquatabs[20]

1. Check package to see the strength of your Aquatabs (see table above).
2. Use the chart provided to see how much water you can treat with the strength of tablet you have. Use the tablet for specified quantities of water.
3. Water should be free from turbidity (less than 5 NTUs) or organic material. Aquatabs should be used for pretreated (filtered) water.
4. Remove tablet(s) from the strip of Aquatabs and drop into a clean container with the correct amount of water.
5. Stir the water with a clean utensil.
6. Cover the container.
7. Wait for 30 minutes before drinking or using the water.
8. Drink and use the safe water within the next 24 hours.

Waste management

Table A3.3. Waste management categorization.

Category	Colour	Way of disposal	Type of container
Infectious non-sharp waste	Yellow or red/labelled	Protected pits or incinerated External waste treatment facilities (autoclaves / incinerators) only with safe means of transport De Montfort Mark 7 incinerators	Washable 40-50 litre PVC containers or cardboard containers with strong, leak-proof plastic bag
Sharps			Puncture-proof containers, such as plastic bottles; encapsulation and disposal of the sharps in sharp pit
Non-infectious common waste (paper, cardboard)	Black/labelled	With general household waste, by the municipal waste collection service	
Chemical waste (medicines, solutions)	Brown/labelled container		Plastic bag or container
Radioactive waste			Lead box with radioactive symbo

[20] Adapted from US Centres for Disease Control and Prevention, Cholera Prevention and Control: Introduction and Community Engagement (Source: Cholera Prevention and Control: Introduction and Community Engagement. Atlanta: US Centers for Disease Control and Prevention [website] https://stacks.cdc.gov/view/cdc/23130/cdc_23130_DS1.pdf)

Annex 4

Illustrated hand hygiene, cleaning guide, food safety

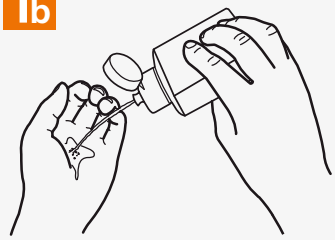
How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds

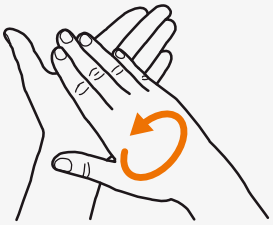
1a

1b



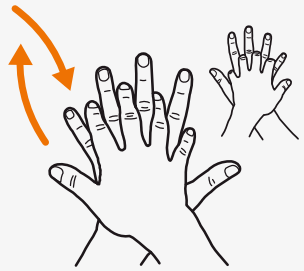
Apply a palmful of the product in a cupped hand, covering all surfaces;

2



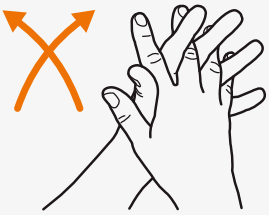
Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4



Palm to palm with fingers interlaced;

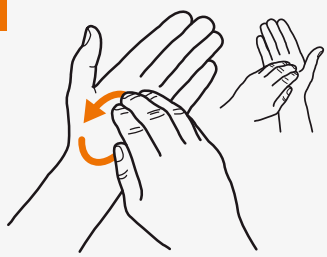
5

Backs of fingers to opposing palms with fingers interlocked;

6

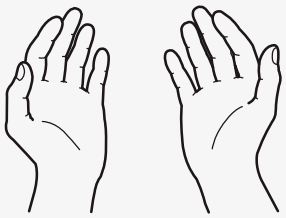
Rotational rubbing of left thumb clasped in right palm and vice versa;

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8



Once dry, your hands are safe.

World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES
Clean **Your** Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

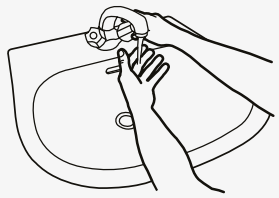
Source: How to Handrub? WHO poster. https://cdn.who.int/media/docs/default-source/patient-safety/how-to-handrub-poster.pdf?sfvrsn=9d2f6e89_11

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED!

Duration of the entire procedure: 40-60 seconds

0

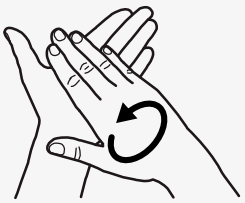


Wet hands with water;

1

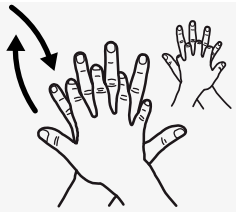
Apply enough soap to cover all hand surfaces;

2



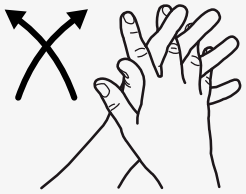
Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

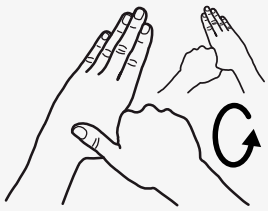


Palm to palm with fingers interlaced;

5

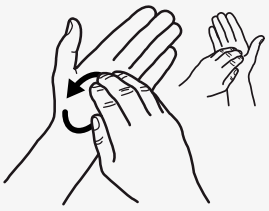
Backs of fingers to opposing palms with fingers interlocked;

6



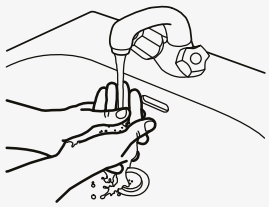
Rotational rubbing of left thumb clasped in right palm and vice versa;

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

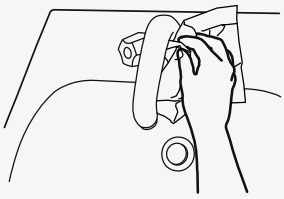


Rinse hands with water;

9

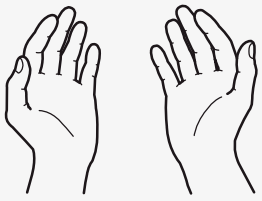
Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11



Your hands are now safe.

World Health Organization

Patient Safety

A World Alliance for Safer Health Care

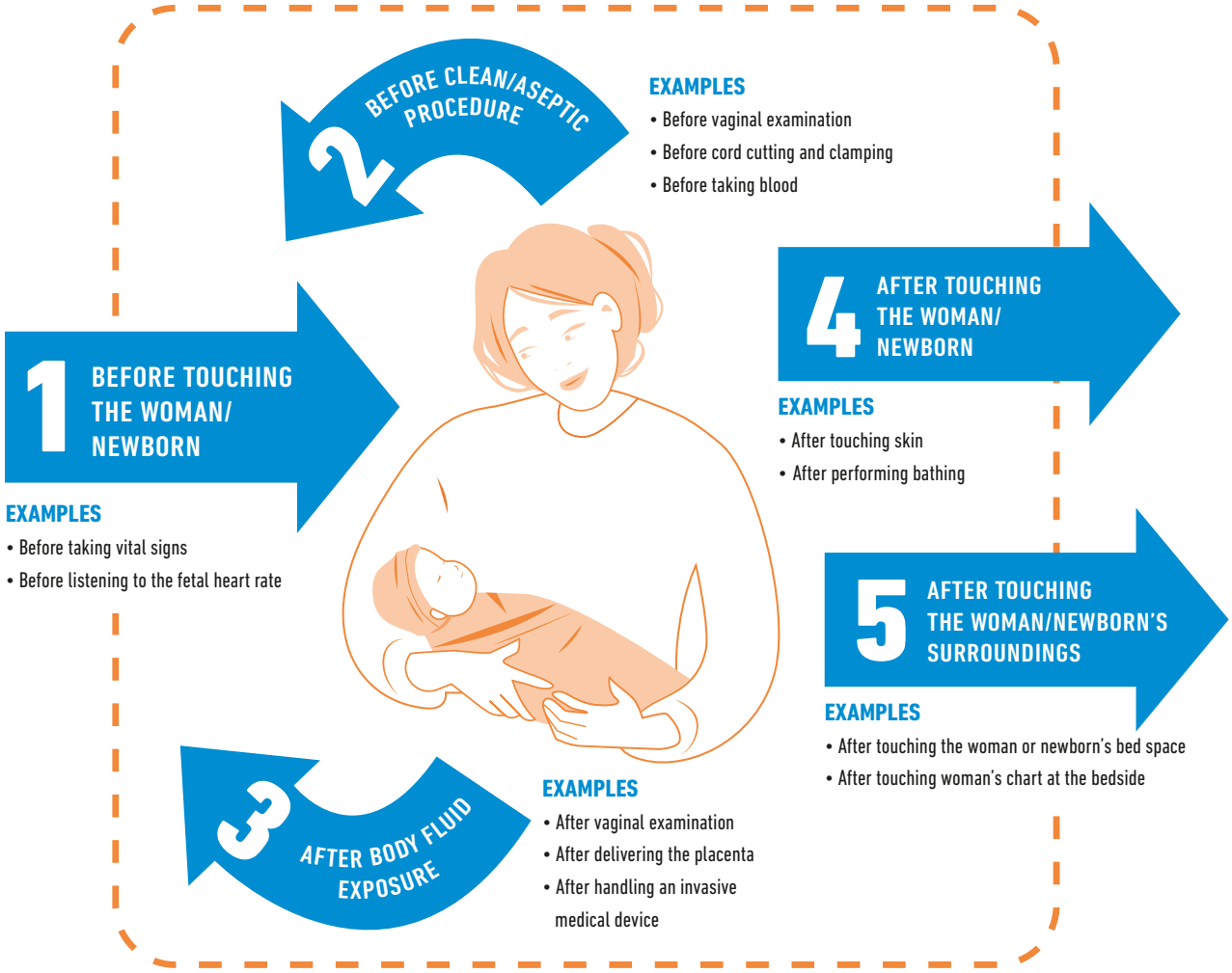
SAVE LIVES
Clean **Your** Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

Source: How to Handwash? WHO poster. https://www.who.int/docs/default-source/patient-safety/how-to-handwash-poster.pdf?sfvrsn=7004a09d_2

YOUR 5 MOMENTS FOR HAND HYGIENE
CARE IN A MATERNITY UNIT



Patient zone – The need for hand hygiene is closely connected with health care workers' activities within the area surrounding each patient, called the *patient zone*, identified by the dotted area. In maternal care, it includes the woman and all inanimate surfaces that are temporarily, but exclusively dedicated to her, including items touched by or in direct physical contact with her. During and after childbirth, it includes both the woman and the newborn and their immediate surroundings.

Hand hygiene opportunities – defined as **moments when a hand hygiene action is needed during health care activities, to interrupt germ transmission by hands.** There may be multiple hand hygiene opportunities within the sequence of maternal and neonatal care (e.g. during labour and childbirth); it is extremely important to meet the requirements for hand hygiene despite the high frequency of opportunities, due to high maternal, neonatal and health care worker's infection risk.

Glove use and the need for hand hygiene – When an opportunity for hand hygiene occurs while wearing gloves, these should be removed to perform hand hygiene. Gloves should always be changed between patients.

For further information please see the document:
"Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities", World Health Organization 2012
https://www.who.int/infection-prevention/publications/hh_evidence/en/

WHO acknowledges Catherine Dunlop (University of Birmingham, Birmingham, United Kingdom (UK)), Claire Kilpatrick (WHO consultant, Glasgow, UK), and David Lissauer (University of Liverpool, Liverpool, UK) for technical input in developing this material.
WHO/UHL/HIS/2020.5

World Health Organization

SAVE LIVES
CLEAN YOUR HANDS

Source: Your 5 Moments for Hand Hygiene care in a maternity unit. WHO Poster.
https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/infection-prevention-and-control/clean-hands-2020/hh-5moments-maternity-v2.pdf?sfvrsn=f78168d_10

HOW TO GUIDE – PUTTING ON PPE FOR CONTACT/DROPLET PRECAUTIONS

1 Perform hand hygiene

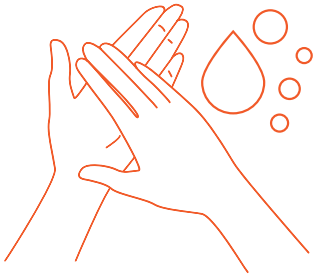
Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

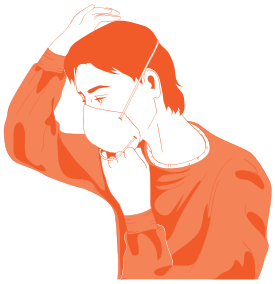
Wash hands for 40–60 seconds.



2 Put on the gown

3 Put on the mask

Medical mask.

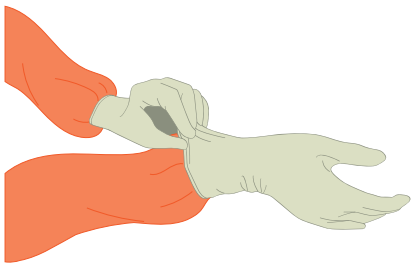


4 Put on eye protection

Put on face shield or goggles.

5 Put on gloves

Ensure glove is placed over the cuff of the gown.



Full PPE

Source:
How to Guide – Putting on/taking off PPE for Contact/Droplet precautions. WHO Poster.
https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2

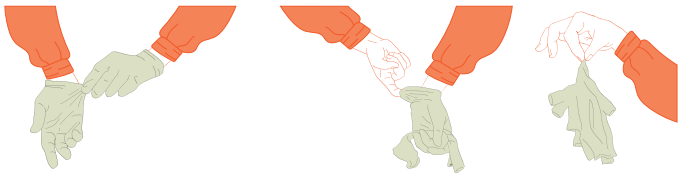
World Health Organization

HOW TO GUIDE – TAKING OFF PPE FOR CONTACT/DROPLET PRECAUTIONS

Ensure that infectious waste containers are available for safe disposal of PPE. Separate containers should be available for reusable items.

Order is important

1 Remove gloves



2 Remove the gown

Ensure gown is pulled away from the body during removal and that clothing does not become contaminated and dispose of them safely.

3 Perform hand hygiene

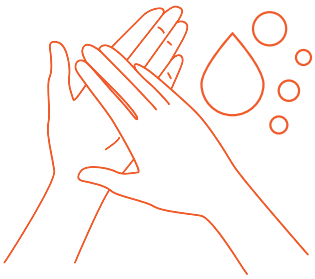
Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

Wash hands for 40–60 seconds.



4 Remove eye protection

Remove face shield or goggles.

5 Remove the mask

Ensure you are taking the mask off from the straps, avoid touching the mask.

6 Perform hand hygiene

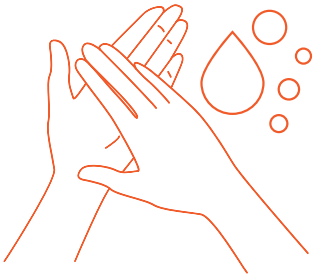
Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

Wash hands for 40–60 seconds.

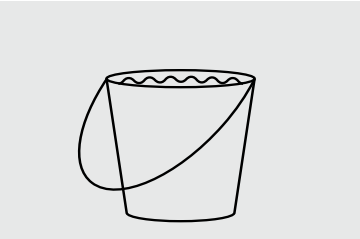


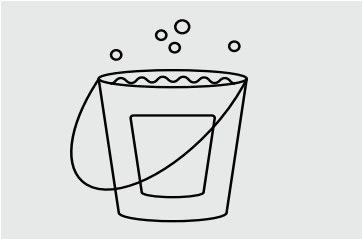
Source:
How to Guide – Putting on/taking off PPE for Contact/Droplet precautions. WHO Poster.
https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2

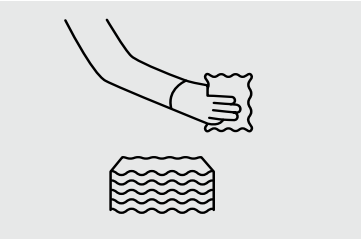
World Health Organization

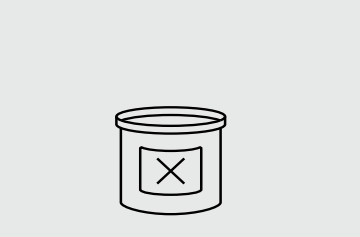
Illustrated cleaning

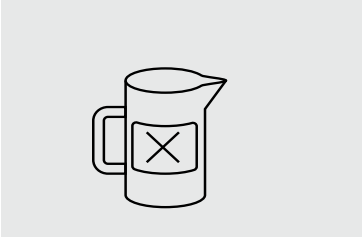
Important objects

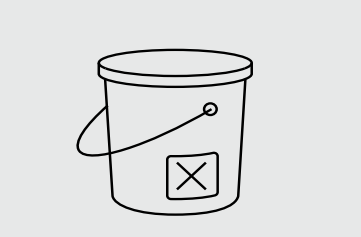

Bucket of water

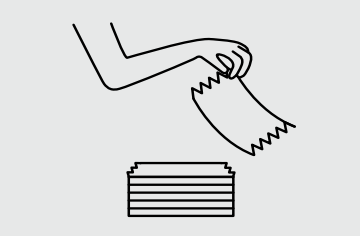

Bucket of detergent solution


Cloth


Chlorine-based disinfectant solution

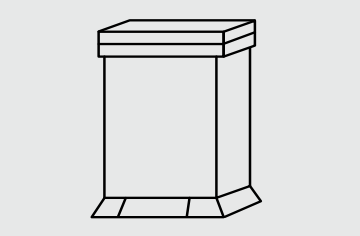

Chlorine-based disinfectant solution jug


Bucket of chlorine-based disinfectant solution


Absorbent material for cleaning blood spillage

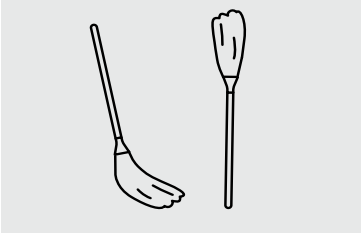

Laundry container


Infectious waste container


Non-hazardous waste container

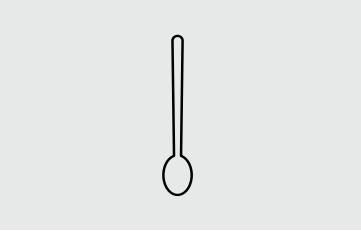

Warning/hazard sign

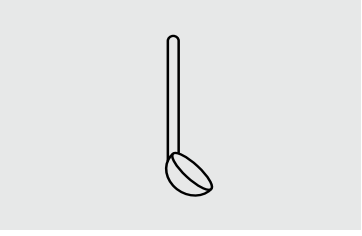

PPE

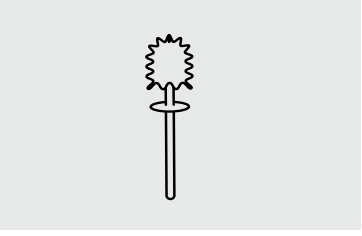

Mop


Alcohol hand rub


Concentrated detergent


Mixing utensil

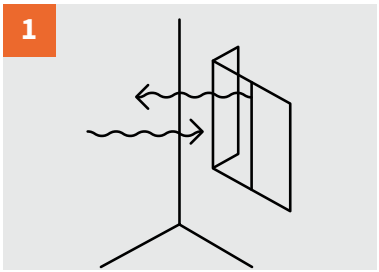

Scoop


Toilet brush

How to prepare chlorine-based disinfectant solution from a powder

Materials:
PPE, chlorine powder,
scoop and mixing utensil,
bucket for water,
infectious waste bin/bag,
manufacturers'
instructions

1



Prepare in a well ventilated room

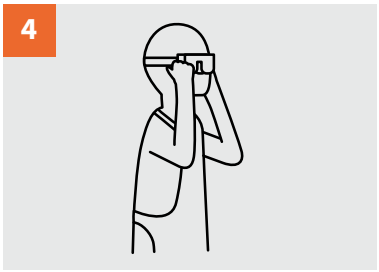
2

Perform hand hygiene

3

Put on apron/gown

4



Put on face protection, that is mask/goggles/faceshield

5

Put on gloves

6

Materials: [*] litres of cold water, chlorine powder, scoop and mixing utensil

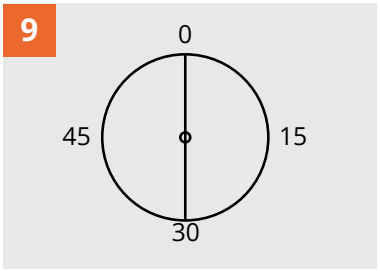
7

Add [*] scoops of chlorine powder to the water

8

Mix the powder into the water

9



Leave for [*] minutes

* as per manufacturers' instructions or desired concentration of sodium hypochlorite solution

How to prepare chlorine-based disinfectant solution from a powder (continued...)

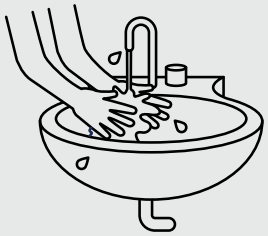
10

Ready for use or store securely with lid

11

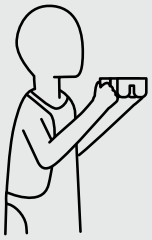
Remove PPE and safely dispose of single use PPE in the waste bin/container

12



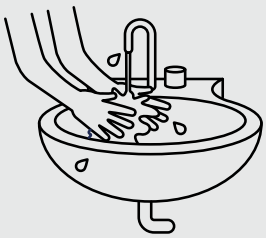
Perform hand hygiene

13



Remove eye protection and safely clean, dry and store and remove mask and dispose of it as infectious waste

14

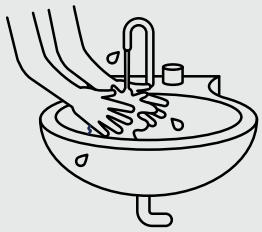


Perform hand hygiene

How to clean a blood spillage

Materials:
Detergent solution, chlorine-based disinfectant solution, buckets for water, warning sign, PPE, infectious waste bin/bag, laundry container, mop, cloth, absorbent material, manufacturers' instructions

1

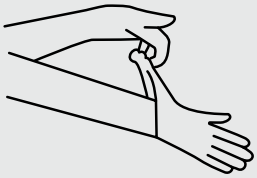


Perform hand hygiene

2

Put on apron/gown

3

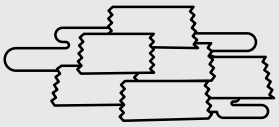


Put on gloves

4

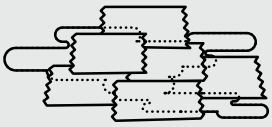
Position warning/hazard signs appropriately

5



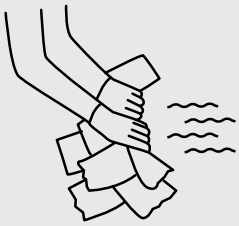
Cover the spillage with absorbent material*

6



Allow the spillage to be absorbed into the material

7



Gather the infectious absorbent material

8

Dispose of immediately as infectious waste

9

Dampen a cloth or mop in detergent solution and go over the area to clean it

* use absorbent granules at this point if available as per manufacturers' instructions

How to clean a blood spillage (continued...)

10

Dispose of cloth as contaminated or soiled for laundering

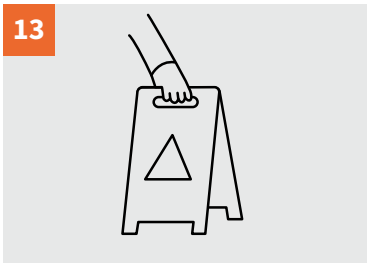
11

or immediately as infectious waste

12

Dampen a cloth or mop in chlorine-based disinfectant solution and go over the area again, then rinse area with water and allow the area to dry. Dispose of cloths in infectious waste or for laundering

13

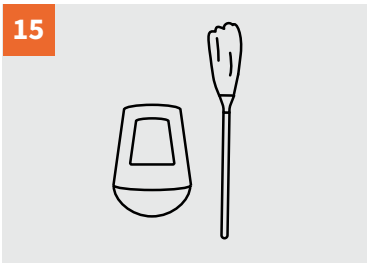


Remove warning/hazard signs

14

Remove PPE and dispose of single use PPE safely in the waste bin/container

15



Clean and dry equipment, or leave to dry

16

Store equipment appropriately in dry a store room

17

Perform hand hygiene

Damp mopping

Materials:
Detergent solution, chlorine-based disinfectant solution, warning sign, PPE, infectious/other waste bin/bag, mop, laundry container

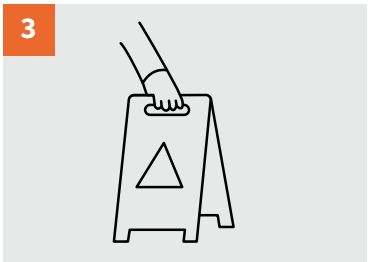
1

Perform hand hygiene

2

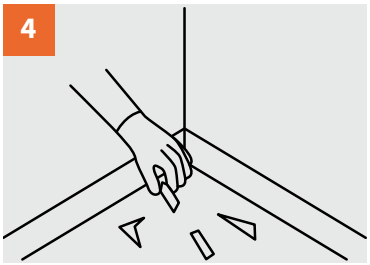
Put on PPE

3



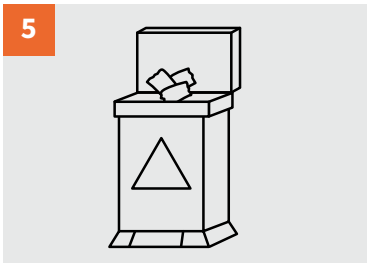
Position warning/ hazard signs where appropriate

4



Remove larger items of debris from floor

5

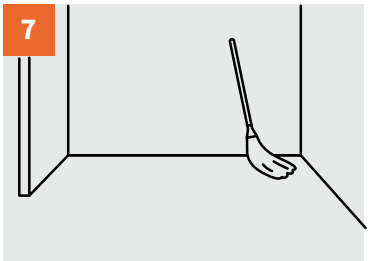


Dispose of debris into the appropriate bin/container

6

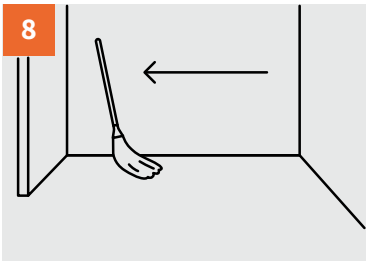
Submerge mop in detergent solution. Squeeze out excess

7



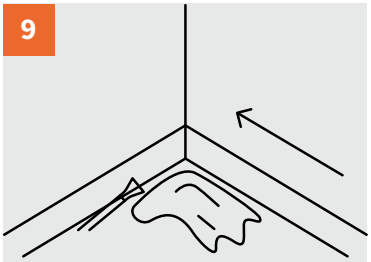
Start at the furthest point from the exit

8



Work backwards to avoid standing on cleaned sections

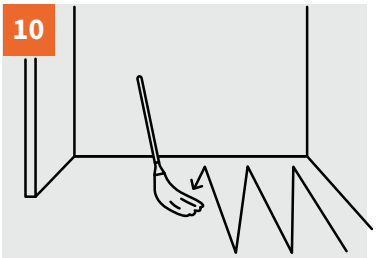
9



Mop the floor edges using a straight stroke to reach corners and skirting

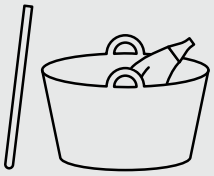
Damp mopping (continued...)

10



Continue working from side to side in backwards direction. Use figure-of-eight pattern while mopping. Turn mop frequently

11

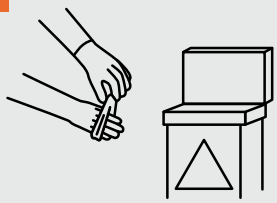


On completion of room or area, remove mop head. Place mop head in laundry container for laundering

12

Remove warning/ hazard signs

13

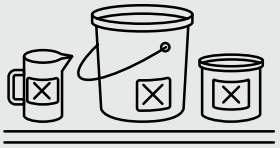


Remove PPE and dispose of single use PPE safely in the waste bin/container

14

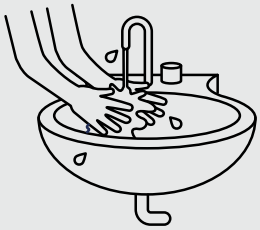
Clean and dry equipment, or leave to dry

15



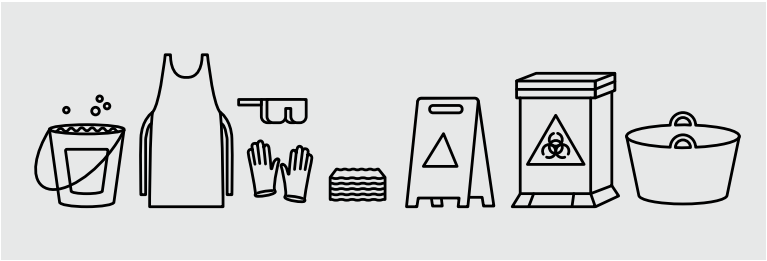
Store equipment appropriately in dry store room

16



Perform hand hygiene

High-touch cleaning



Materials:
Detergent solution, PPE, cloth, warning sign, infectious waste bin/bag, laundry container

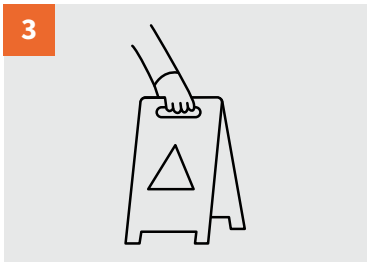
1

Perform hand hygiene

2

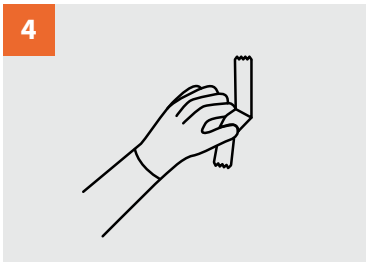
Put on PPE

3



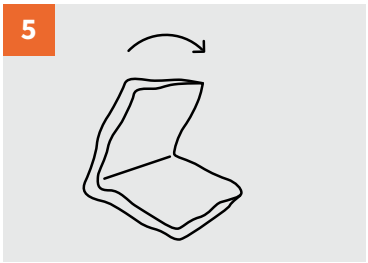
Position warning/hazard signs where appropriate

4



Remove any debris and sticky tape from the surfaces

5

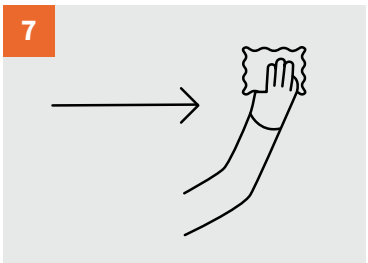


Fold the cloth to create a number of clean cloth surfaces

6

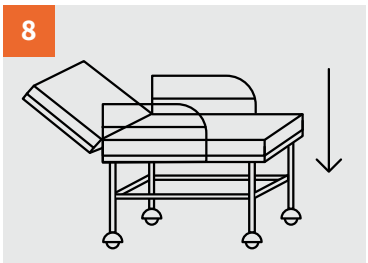
Dampen the cloth in detergent solution. Do not double dip

7



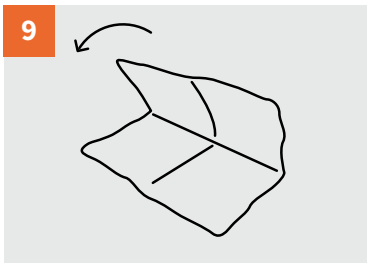
Clean all high-touch surfaces with the damp cloth using one swipe

8



Work systematically from high to low surfaces (and from clean to dirty)

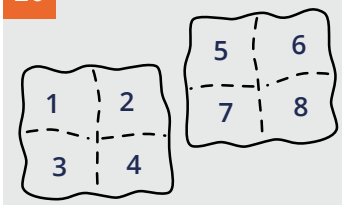
9



Fold a section of the cloth over to reveal a clean unused surface

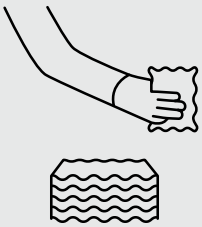
High-touch cleaning (continued...)

10



Wipe, fold, continue until all sides have been used

11



Replace the cloth and continue

12

Dispose of used cloths in appropriate waste or laundry bins/container. Continue replacing cloths until the task is finished

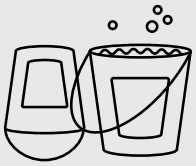
13

Remove warning/hazard signs

14

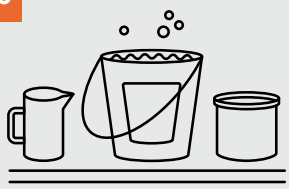
Remove PPE and dispose of single use PPE in appropriate waste bin/container

15



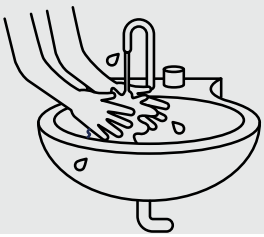
Clean and dry equipment (or leave to dry)

16



Store equipment appropriately in a dry store room

17



Perform hand hygiene

How to clean a standard (Western-style) toilet

Materials:
PPE, detergent solution, chlorine jug, chlorine-based disinfectant solution, absorbent material, water bucket, warning sign, infectious waste bin/bag, cloths, toilet brush, laundry container

1

Perform hand hygiene

2

Put on PPE

3

Position warning/hazard signs appropriately

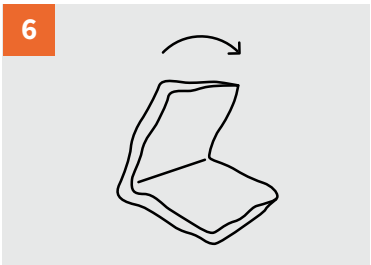
4

Flush the toilet before cleaning

5

Pour a small amount of prepared chlorine-based disinfectant solution inside the toiled bowl. Make sure the inside and waterline are covered by the solution. Leave solution in contact. Do not allow solution to dry

6



Fold the cloth to create a number of clean cloth surfaces

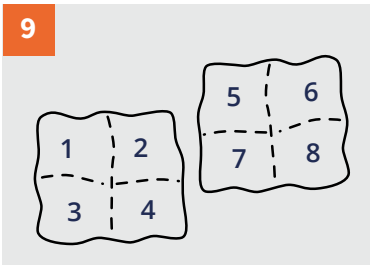
7

Dampen the cloth in detergent solution

8

Clean toilet handle

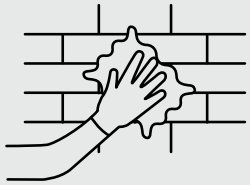
9



Continue until all the clean surfaces of the cloth have been used then replace the cloth

How to clean a standard (Western-style) toilet (continued...)

10

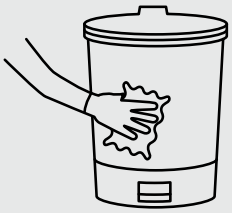


Work systematically from clean to dirty and from outside in, clean wall tiles, ledges and pipe work

11

Replace the cloth. Dispose of used cloths in appropriate waste or laundry bins/container. Continue replacing cloths until the task is finished

12



Empty and clean toilet bins

13

Clean the rim and the underside of the bowl

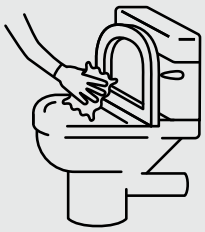
14

Clean the cistern

15

Clean the toilet seat

16



Clean the underside and the hinges

17

Finish with the junction with the floor

18

Repeat the process with chlorine-based disinfectant solution

19

Scrub the inside of the toilet with the toilet brush

20

Keep brush in the fresh flushing water to clean

21

Rinse surfaces with water

How to clean a standard (Western-style) toilet (continued...)

22

Dry surfaces with a clean cloth

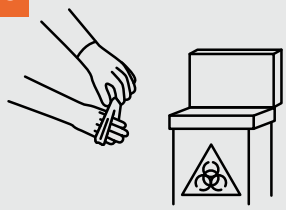
23

Dispose of cloths as soiled linen or infectious waste

24

Remove warning/hazard signs

25

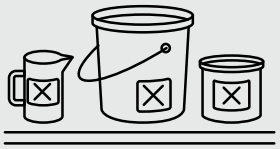


Remove PPE and safely dispose of single use PPE as infectious waste

26

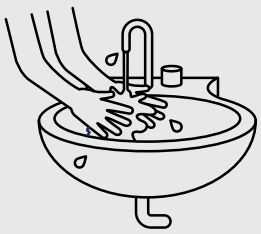
Clean and dry equipment, or leave to dry

27



Store equipment appropriately in a dry store room

28



Perform hand hygiene

How to clean a squat toilet

Materials:
PPE, chlorine jug, detergent solution, chlorine-based disinfectact solution, water bucket, cloths, mop, warning sign, infectious waste bin/bag, laundry container

1

Perform hand hygiene

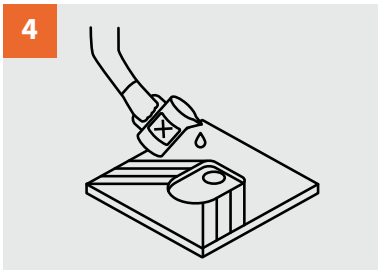
2

Put on PPE

3

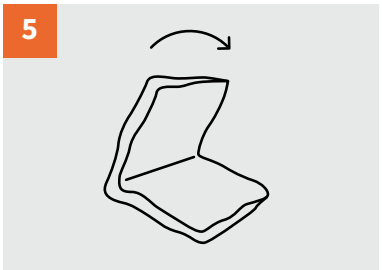
Position warning/hazard signs appropriately

4



Put prepared chlorine-based disinfectant solution inside bowl. Make sure the bowl is covered and leave solution in contact without allowing it to dry

5

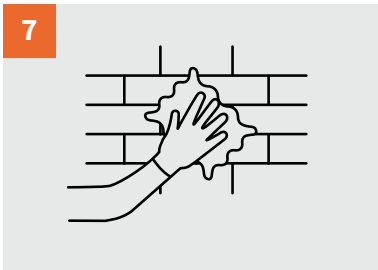


Fold the cloth to create a number of clean cloth surfaces

6

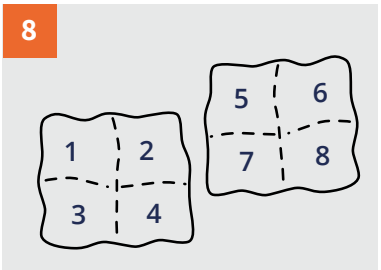
Dampen the cloth in a detergent solution

7



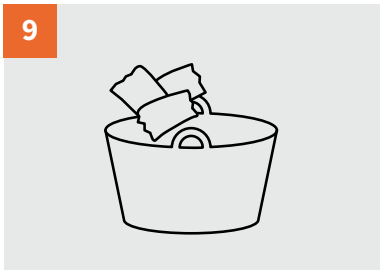
Work systematically from clean to dirty, working from outside in clean the wall tiles, ledges and pipework

8



Continue until all the clean surfaces of the cloth have been used then replace the cloth

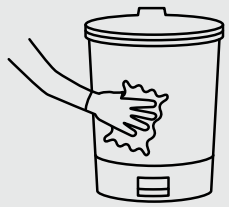
9



Dispose of the cloths as soiled linen

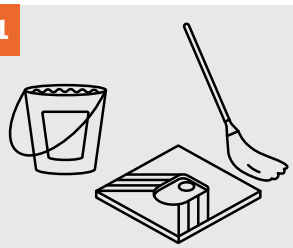
How to clean a squat toilet (continued...)

10



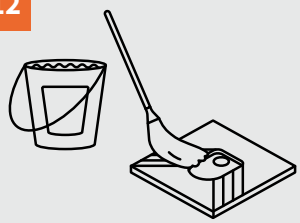
Empty and clean the toilet bins

11



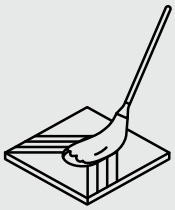
Using the detergent solution, mop around the outside of the squat toilet

12



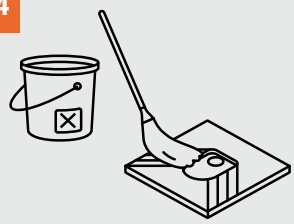
Using the detergent solution, mop the inside of the squat toilet bowl

13



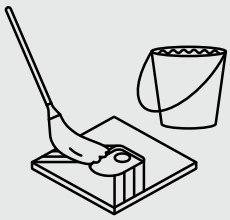
Make sure to clean under the rim of the squat toilet bowl

14



Repeat the process with chlorine-based disinfectant solution

15



Rinse the area and squat toilet bowl with water, and then dry

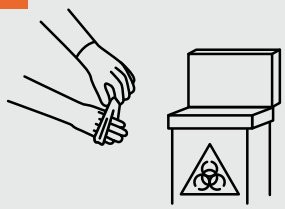
16

Dispose of cloths/mop as soiled linen or infectious waste

17

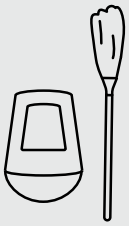
Remove warning/hazard signs

18



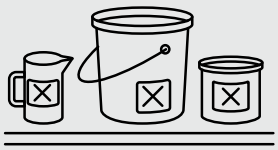
Remove PPE and safely dispose of single use PPE as infectious waste

19



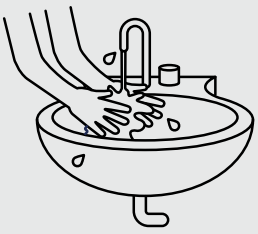
Clean and dry equipment, or leave to dry

20



Store equipment appropriately in a dry store room

21



Perform hand hygiene

How to clean a delivery bed

Materials:
PPE, detergent solution, chlorine-based disinfectant solution, warning sign, cloths, infectious waste, bag or bin, laundry container

1

Perform hand hygiene

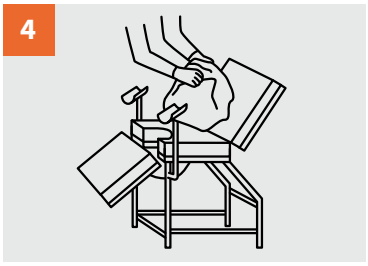
2

Put on apron and gloves

3

Position warning/hazard signs appropriately

4

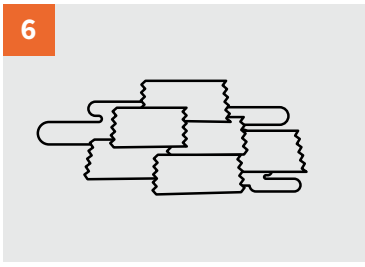


Remove linen from the delivery bed, rolling contaminated area into centre

5

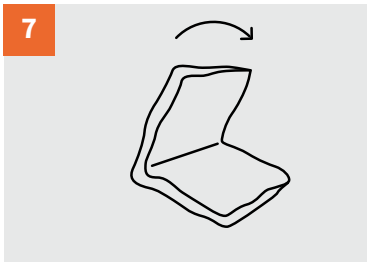
Place linen into the container for used/soiled laundry

6



Manage any blood/body fluid spills (as per how to clean a blood spillage)

7



Fold the cloth to create a number of clean cloth surfaces

8

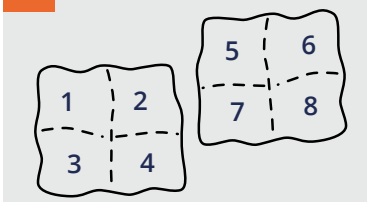
Dampen or rinse folded cloth in detergent solution

9

Clean delivery bed mattress first and work systematically from top to bottom

How to clean a delivery bed (continued...)

10

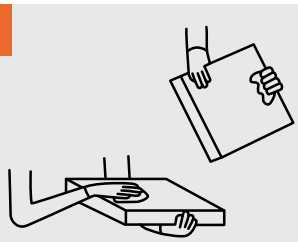


Continue until all the clean surfaces of the cloth have been used then replace the cloth

11

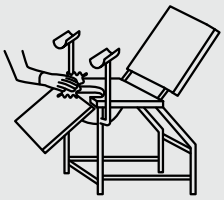
Replace the cloth. Dispose of used cloths in appropriate waste or laundry bins/container. Continue replacing cloths until the task is finished

12



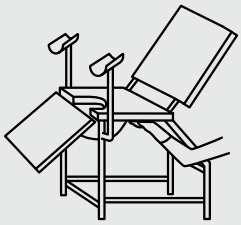
Clean both sides and the edges of the mattres

13



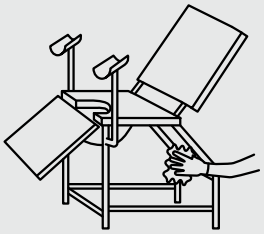
Clean the bed base

14



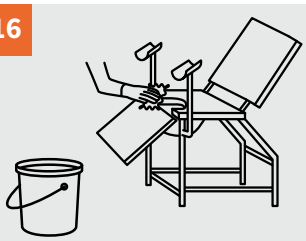
Clean the underside

15



Clean the joints and the frame

16



Repeat the process with chlorine-based disinfectant solution if necessary, wipe with water to remove chlorine residue and leave to dry

17

Dispose of used cloths as soiled linen or infectious waste and/or other waste

18

Remove warning/hazard sign

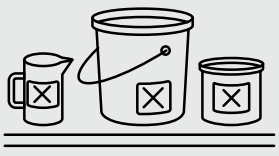
19

Remove PPE and safely dispose of single use PPE as infectious waste

20

Clean and dry equipment, or leave to dry

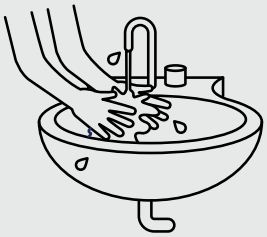
21



Store equipment appropriately in a dry store room

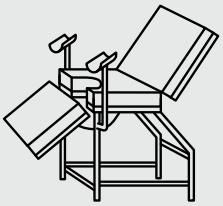
Fig. 3.25 How to clean a delivery bed (continued...)

22



Perform hand hygiene

23



Reassemble delivery bed

How to clean a ward bed

Materials:
PPE, detergent solution, chlorine-based disinfectact solution, warning sign, cloths, infectious waste, bag or bin, laundry container

1

Perform hand hygiene

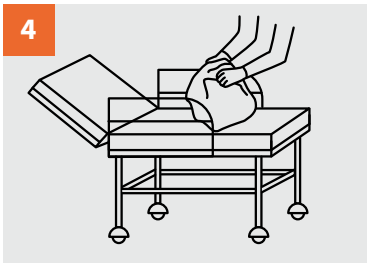
2

Put on PPE

3

Position warning/hazard signs where appropriate

4

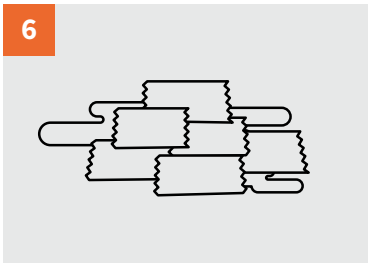


Remove linen from the delivery bed, rolling contaminated area into centre

5

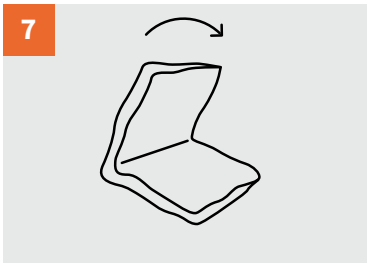
Place linen into the container for used/soiled laundry

6



Manage any blood/body fluid spills (as per how to clean a blood spillage)

7

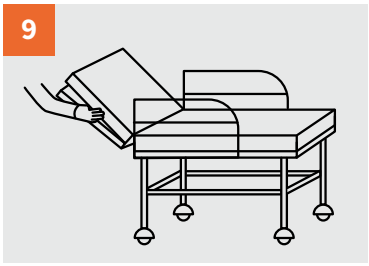


Fold a section of the cloth over to reveal a clean unused surface

8

Dampen the cloth in a chlorine-based disinfectant solution

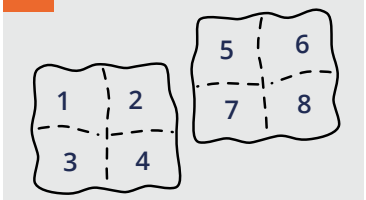
9



Clean ward bed mattress first and work systematically from top to bottom

How to clean a ward bed (continued...)

10

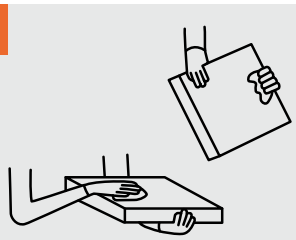


Continue until all the clean surfaces of the cloth have been used then replace the cloth

11

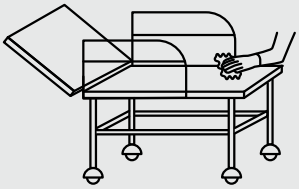
Replace the cloth. Dispose of used cloths in appropriate waste or laundry bins/container. Continue replacing cloths until the task is finished

12



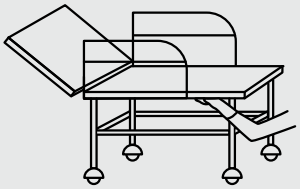
Clean both sides and the edges of the mattress

13



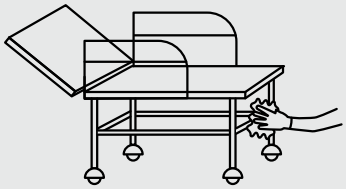
Clean the bed base

14



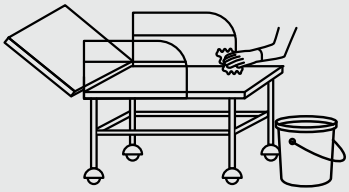
Clean the underside

15



Clean the joints and the frame

16



Repeat the process with chlorine-based disinfectant solution if necessary, wipe with water to remove chlorine residue and leave to dry

17

Dispose of cloths in the appropriate laundry container

18

Remove warning/hazard signs

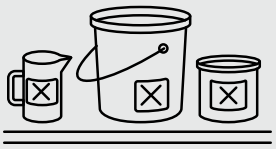
19

Remove PPE and safely dispose of single use PPE as infectious waste

20

Clean and dry equipment, or leave to dry

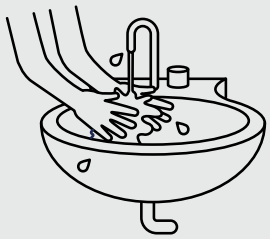
21



Store equipment appropriately in a dry store room

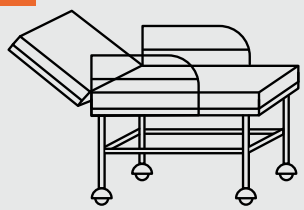
How to clean a ward bed (continued...)

22



Perform hand hygiene

23



Reassemble ward bed

Source:
Environmental cleaning and infection prevention and control in health care facilities in low- and middle-income countries: trainer's guide.
World Health Organization. https://iris.who.int/handle/10665/366379

Five keys to safer food

Keep clean

- Wash your hands before handling food and often during food preparation
- Wash your hands after going to the toilet
- Wash and sanitize all surfaces and equipment used for food preparation
- Protect kitchen areas and food from insects, pests and other animals

Why?

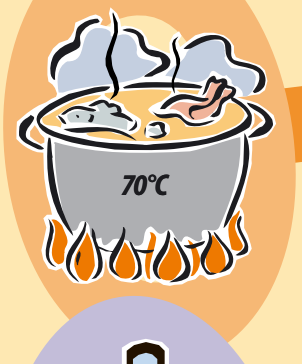
While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.

Separate raw and cooked

- Separate raw meat, poultry and seafood from other foods
- Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- Store food in containers to avoid contact between raw and prepared foods

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

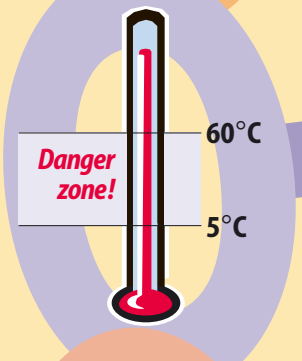


Cook thoroughly

- Cook food thoroughly, especially meat, poultry, eggs and seafood
- Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



Keep food at safe temperatures

- Do not leave cooked food at room temperature for more than 2 hours
- Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- Keep cooked food piping hot (more than 60°C) prior to serving
- Do not store food too long even in the refrigerator
- Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.

Use safe water and raw materials

- Use safe water or treat it to make it safe
- Select fresh and wholesome foods
- Choose foods processed for safety, such as pasteurized milk
- Wash fruits and vegetables, especially if eaten raw
- Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

Design: Marilyn Langfeld. Illustration: Janet Pettpierre

Food Safety
World Health Organization

Knowledge = Prevention

WHO/SDE/PHE/FOS/01.1
Distribution: General
Original: English

Source: Five keys to safer food. WHO Poster. https://www.who.int/publications/i/item/WHO-SDE-PHE-FOS-01.1