Infection prevention and control and water, sanitation and hygiene measures for home care and isolation for mpox in resource-limited settings

Interim operational guide
October 2024

World Health Organization

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Definitions

Caregivers	Caregivers refer to parents, spouses and other family members or friends providing informal care as opposed to the care provided by health-care providers *(1).*
Care workers	Care workers provide direct personal care services in the home, in health care and residential settings, assisting with routine tasks of daily life, and performing a variety of other tasks of a simple and routine nature *(2)*. • Health-care assistants: Institution-based, personal-care workers who provide direct personal care and assistance with activities of daily living to patients and residents in a variety of health-care settings, such as hospitals, clinics and residential nursing-care facilities. They generally implement established care plans and practices under the direct supervision of medical, nursing or other health professionals or associate professionals *(2).* • Home-based personal care workers: who provide routine personal care and assistance with activities of daily living to persons who are in need of such care due to effects of ageing, illness, injury, or other physical or mental conditions, in private homes and other independent residential settings *(2).*
Health workers	Health workers are all people primarily engaged in actions with the primary intent of enhancing health. This document uses the phrase "health and care worker" to represent both health workers and care workers *(2).*
Health and care workers	Health and care workers as term is not a separate term, but rather a combination of “health workers” and “care workers” *(2).*
Isolation	Isolation is the separation of those infected with a contagious disease from those who are not infected.
Kinship care	Kinship care, as defined by UNICEF, is family-based care within the child’s extended family or with close friends of the family known to the child, whether formal or informal in nature (UN General Assembly Resolution, Res/64/142.).

Acronyms

IPC	infection prevention and control
MPXV	monkeypox virus
NTU	nephelometric turbidity units
PPE	personal protective equipment
PPM	parts per million
WASH	water, sanitation and hygiene
WHO	World Health Organization

Key messages

- **Assess if the person with mpox is suitable for home care and isolation. Persons with mild, uncomplicated mpox may be isolated and receive care at home. Children under 5 years old should be cared for in a health facility as they are considered at higher risk for complications.**
- **If a separate room is unavailable for isolating the person with mpox, designate a specific area within the shared space for this purpose.**
- **Persons with mpox and their contacts should practice frequent hand hygiene and cleaning and disinfection of environment.**
- **Health and care workers should have training and required supplies (personal protective equipment [PPE], alcohol-based handrub) prior to entering the households of persons with mpox. If these are not available health and care workers should avoid entering the houses and should maintain at least a 1 metre distance from the person with mpox.**
- **Authorities should ensure access to safe water, sanitation, hygiene (soap and water) and waste disposal for persons with mpox and their family members during home isolation.**
- **When resources are limited, consider strategies that do not exacerbate existing infrastructure issues. For example, an IPC strategy heavily focused on disposable PPE is not suitable if local safe waste disposal services are inadequate.**

1. Introduction

1. Introduction

1.1 Background

Mpox is a viral illness caused by the monkeypox virus (MPXV). There are two distinct clades of the virus: clade I (with subclades Ia and Ib) and clade II (with subclades IIa and IIb) *(3)*. Historically, outbreaks of MPXV are thought to be caused by sporadic animal-to-human transmission, but in recent years MPXV has caused outbreaks driven by human-to-human transmission of the virus.

Mpox spreads from person to person mainly through close contact with someone who has mpox, including members of the same household *(3)*. Close contact includes skin-to-skin (such as touching or sex), mouth-to-mouth or mouth-to-skin (such as kissing), and face-to-face (such as talking or breathing close to someone who has mpox, which can generate infectious respiratory particles*) (3)*. The natural reservoir of the virus is unknown, but various small mammals, such as squirrels and monkeys, are susceptible *(3)*.

People can also contract mpox from contaminated objects, such as clothing, bedding or through needle injuries in health care or in community settings, such as tattoo parlours *(3)*. People with multiple sexual partners are at higher risk of acquiring mpox. During pregnancy or when giving birth, a person may pass the virus to the foetus or baby *(3)*. Contracting mpox in the womb can be dangerous for the foetus or newborn infant and can lead to loss of the pregnancy, stillbirth, serious infection, death of the newborn and other complications *(3)*. People with mpox can pass the disease on to others until all lesions have healed and a new layer of skin has formed *(3)*.

1.2 Principles and rationale

This document presents relevant World Health Organization (WHO) infection prevention and control (IPC) guidance for mpox, as detailed in the document titled *Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance (4)*. The section on water, sanitation and hygiene (WASH) is based on the guiding principles found in the *Sphere Handbook (5)*, *essential environmental health standards for health care (6)*, *guidelines on sanitation and health (7)*, and *guidelines for drinking-water quality (8)* (see Annex 7 for details on Methodology).

This document is intended for use solely in exceptional circumstances where implementation of the WHO interim rapid response guidance , *Clinical management and infection prevention and control for monkeypox* cannot be applied.

1.3 Objective

To outline relevant IPC and WASH measures for the care and isolation for persons with uncomplicated mpox managed at home in resource-limited settings.

1.4 Intended audience

This document is intended for emergency responders, IPC and WASH focal points and other health and care workers, including community health workers and social workers (see definitions) who are working in settings where mpox cases are being isolated at home, national and local public health authorities, humanitarian organizations, aid workers and responders and representatives of partner organizations supporting response operations. This document addresses individuals who will be assessing the eligibility of persons with mpox for home care and those who will support and manage home care.

1.5 Contextual considerations

Health agencies need to consider downstream ramifications when providing public health guidance for home settings in limited-resource settings. For instance, supplying disposable PPE without ensuring safe waste disposal could lead to unsafe practices and community transmission, thereby increasing the risk of environmental contamination or spillover to animal populations. Agencies must carefully weigh the pros and cons of their recommendations and consider practical alternatives when necessary.

Whenever and wherever possible, it is preferable to promote self-agency—encouraging individuals with mpox to care for themselves, to clean and to manage their own laundry. In resource-limited settings, the focus should remain on source-control measures that stop the further spread of MPXV (e.g. covering lesions, frequent hand washing). The wearing of PPE is recommended only when a person is in close contact with a person with mpox; regular mask use by the public within the community is not advised.

When implementing isolation, health officials must integrate human rights principles to ensure that isolations are conducted safely and with dignity for both patients and household members *(9, 10)*. Support for those in isolation should include access to adequate food, water, hygiene, medical supplies and health and care workers and services for pain management and treatment *(9, 10)*. In addition economic, social and mental health support should be provided *(9, 10).*

1.6 Considerations for caring for children in the home

Children under 5 years of age with mpox are considered a high-risk group and are not advised to receive home-based care *(4)*. Children who are unable to cover their lesions or tolerate wearing a well-fitting medical mask when in the presence of other household members should be assessed for treatment in a health facility or treatment centre. Wherever and whenever possible, children should remain with their caregivers; this decision should be made in consultation with the caregiver and the child. Accommodations should be made to address the psychosocial well-being of children receiving home care and isolation and to allow them the opportunity to play.

To prepare families with children for potential illness within their household, social and case workers and/or other health and care workers (see definitions) should help parents and guardians plan and agree in advance on how they will care for a child if the child's primary caregiver has become ill.

Isolation should avoid family separation and should avoid exposing children to violence, abuse or neglect. In cases where a parent is unable to care for their children during isolation, that child should be provided with safe alternatives, like kinship care. Parent-child communication should be maintained throughout. For additional information on care of children and breastfeeding, refer to the *Clinical management and infection prevention and control for monkeypox: interim rapid response guidance (4)*.

2. Determining if the person with mpox can be cared for and isolated at home

2. Determining if the person with mpox can be cared for and isolated at home

2.1 Evaluation of the person with mpox for home care and isolation

Persons with mild, uncomplicated mpox may be isolated at home. The decision as to whether to care for a person with mpox at home depends on the following key factors, among others:

1. Clinical evaluation of the person with mpox (including risk factors, see Annex 2);
2. There is an established mechanism to monitor the disease progression of a person with mpox at home;
3. The ability to maintain necessary precautions to prevent onward transmission in the household; and
4. Access to sufficient safe water to perform cleaning and disinfection and personal hygiene and supplies sufficient to mitigate the risks of transmission to caregivers and household members (see Annex 4 for proposed supply list).

If the household is unable to safely manage the care and isolation of the person with mpox, then that person should be referred to a health facility, treatment centre or other setting with isolation capacity.

If the condition of the person with mpox deteriorates, contact the local emergency health authority.

For more details on clinical considerations for home care, see Annex 2.

3. IPC measures for health and care workers, caregivers and persons with mpox during home care and isolation

3. IPC measures for health and care workers, caregivers and persons with mpox during home care and isolation

Support for home care, including isolation, may be provided by health and care workers (including community health workers and volunteers, see definitions). Health and care workers, community health workers and other front-line workers should offer compassionate, respectful and people-centred care when providing care to people affected by mpox.

Most communities have existing support mechanisms that can be engaged to support safe home care. This can be done through partnership and collaborative training with community-based organizations, civil society and community networks (e.g. non-governmental organizations, women's groups, youth groups, organizations of persons with disabilities and faith organizations) *(11, 12)*. The active involvement of grassroots community organizations can have a positive impact on the behavior of populations.

3.1 IPC measures for health and care workers

Health and care workers should prepare and take the necessary supplies (e.g. PPE, alcohol-based handrub) with them prior to departing to the houshold. Health and care workers should wear the appropriate PPE when entering the home of a person with mpox (see Table 1).

It is essential that health and care workers receive appropriate training on how mpox is transmitted, and the IPC measures required to prevent further spread of mpox. They must also be trained on how to provide social and mental health support; on how to combat stigma; and on how to protect their own physical and mental health. See Annex 3 for more details on training requirements.

3.2 IPC measures for a person with mpox in the home

Table 2 outlines the IPC measures required for safe home care and isolation of persons with mild, uncomplicated mpox, including possible alternatives when resources are limited. This information should be promptly and thoroughly provided through direct counselling to the person with mpox and their designated caregiver by a health and care worker or community health worker. The designated caregiver should be provided with PPE to be used when in close proximity to the person with mpox (see Table 3 and Annex 4 for home supplies kit).

Table 1. IPC measures for health and care workers during home care

WHO statements[1]	Alternative options
Health and care workers should wear appropriate PPE (gown, gloves, filtering face piece respirator [e.g. N95 or FFP2] and eye protection) when entering the home of a person with mpox and when within at least 1 metre of that person.	Health and care workers should wear closed shoes, which should be cleaned and disinfected when they exit the patient area. Ask the household to provide supplies to clean and disinfect shoes upon leaving (see Table 5). If PPE is not available, health and care workers should not enter the household of a person with mpox. Instead, health and care workers should converse outside the home with the dedicated caregiver while maintaining at least 1 metre distance from the person with mpox.
Perform hand hygiene according to the WHO 5 moments[2] before and after putting on and removing PPE and after contact with the household.	If no hand hygiene supplies are available, refrain from entering the household. Keep distance of at least 1 metre from person with mpox.
The person with mpox should cover their lesions and wear a well-fitting medical mask when in close proximity to the health and care worker.	The person may cover their lesions with their personal clothing and use a well-fitting fabric mask if a medical mask is not available.
During care for a person with mpox, any generated waste, such as bandages and PPE, should be placed in a strong bag that is securely tied before disposal and eventual collection by municipal waste services (see Table 9).	See Table 9 for additional details on options for waste and disposal.

Table 2. IPC measures for person with mpox during home care

WHO statements[1]	Alternative options for implementation if resources are limited
The person with mpox should remain in a separate, well-ventilated area (i.e. a separate room or area separated with a curtain or screen) and away from other household members, pets and shared areas of the home unless that person needs to do urgent or essential activities, such as obtaining care at a facility or getting exercise or fresh air *(13)*.	If a separate room is not available, identify and clearly mark a dedicated space (hereafter referred to as the isolation area) for the person with mpox. Examples for marking the area include the use of screens, curtains or tape.
	If the person with mpox must leave the designated isolation area, they should cover their lesions (with sterile dressing or clean clothing); wash their hands; physically distance from others (at least 1 metre); and wear a well-fitting medical or fabric mask prior to leaving the isolation area. If visiting a health-care facility, they should notify the facility of their planned arrival in advance, whenever possible.
Persons at home with mpox should be able to manage their self-care.	If the person with mpox requires assistance, designate one person in the household to care for that person. Preferably, that caregiver should be someone who is in good health, is not pregnant, has no underlying chronic conditions and has had previous smallpox vaccination, mpox vaccination or MPXV infection.
Household members and the person with mpox should frequently clean their hands with soap and water when their hands are visibly dirty or soiled or with an alcohol-based handrub when their hands are visibly clean. In cases where the person with mpox must leave the isolation area, that person should refrain from touching the environment outside of the isolation area.	Work with implementing partners and health-care organizations to provide IPC supplies for home care and isolation (See Annex 4). The person with mpox should have their own soap that they do not share with other household members.

[1] Measures extracted and adapted from the WHO rapid emergency guidance: *Clinical management and infection prevention and control for monkeypox: interim rapid response guidance (4)*.
[2] For additional details on hand hygiene refer to https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/guidelines-and-evidence.

The person with mpox should not share a bed or sleeping area with other people or animals.	Use a separate mattress or identify a separate sleeping area for the person with mpox to sleep and instruct the household members that only the person with mpox should use that mattress or sleeping area.
A person with mpox should avoid direct contact with soft household furnishings, such as couches or chairs.	Cover soft furnishings with sheets, blankets or waterproof mattress protectors before the person with mpox uses them. These coverings should be laundered after use (see Table 4).
People outside of the immediate household should refrain from visiting during the period of isolation[3]. During the period of isolation, facilitate communication with the person with mpox's support network (e.g. family members, friends, religious leaders, providers of mental health care, etc.) remotely via phones or protective screens. Provide caregivers and support persons accurate and easily understood information about the condition and the treatment (*11, 12*).	
Persons with mpox who are receiving home care and are isolated should refrain from contact with wild or domestic animals to avoid infecting the animal. This includes keeping possibly infectious and contaminated material, such as linens, towels and clothing, away from pets and other animals. Another person should take care of domestic animals throughout the duration of isolation[3].	

Table 3. IPC measures for caregivers during home care

WHO statements: for caregiver[4]	Alternative options for implementation if resources are limited
The designated caregiver should preferably be someone who is in good health, is not pregnant, has no underlying chronic conditions and has had previous smallpox or MPXV (if available) vaccination or MPXV infection.	
Supplies for hand hygiene, such as soap and water or alcohol-based handrub, should be available in the household.	Work with implementing partners and health-care organizations to provide IPC supplies for home care and isolation.
If the designated person (e.g. caregiver) who is facilitating self-care needs to enter the isolation area, they should maintain a distance of at least 1 metre from the person with mpox; avoid touching the surrounding environment (surfaces, utensils or linen of the person with mpox); and perform hand hygiene upon leaving the isolation area.	When a distance of at least 1 metre cannot be maintained, the designated caregivers must wear a well-fitting medical or fabric mask and disposable or reusable gloves. They should clean their hands with either soap and water or an alcohol-based handrub, before and after contact with the person with mpox or with the surrounding environment, and before putting on and after removing their gloves and mask.
Caregivers should wear appropriate PPE (a medical mask and disposable gloves) when within 1 metre of a person with mpox.	If PPE is not available, consider the use of other barriers, such as reusable gloves, a well-fitting fabric mask and dedicated footwear. When it is not possible to have a dedicated pair of shoes to wear around the person with mpox, shoes that can be thoroughly washed and dried can be worn. Wash shoes using the same method as described in Table 4. Shoe covers are not advised. A caregiver should wear clothing that fully covers the skin, such as long pants or long skirt and a long-sleeved shirt After leaving the patient-isolation area or following close contact with a person with mpox or with any surfaces they may have touched, the caregiver should promptly change clothing, then wash their hands with soap and water or, if their hands are not visibly soiled, use alcohol-based handrub. The clothing should be laundered promptly (see Table 4).

[3] Duration of isolation: people with mpox should isolate themselves until all lesions have crusted over, the scabs have fallen off and a new layer of skin has formed.
[4] Measures extracted and adapted from the WHO rapid emergency guidance: *Clinical management and infection prevention and control for monkeypox: interim rapid response guidance (2)*.

The designated caregiver should receive instructions on how to put on, remove and discard the PPE. Emphasizing the importance of performing hand hygiene after removing PPE is important.
Caregivers should always perform hand hygiene (using either soap and water when hands are visibly soiled or alcohol-based handrub when they are not visibly soiled) immediately after touching any surface or item in the area where the person with mpox is staying or after providing care to the person with mpox. Practice hand hygiene at these other key moments: Before, during and after you prepare food; before eating; after using the toilet; when hands are visibly dirty; after coughing or sneezing; after handling animals or animal waste; after touching the person with mpox or their nearby surroundings.

4. Linen management and environmental cleaning during home care

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Table 4. Management of linens when caring for persons with mpox at home

WHO statements[5]	Alternative options for implementation if resources are limited
Caution should be taken when handling and cleaning linens.	
Do NOT shake linens. Instead, carefully and gently lift and roll linen and bedding.	
Ideally, only the person with mpox should handle and launder their bedding, clothing, etc.	Designated caregiver may launder bedding and clothing if the person with mpox is unable to do so (i.e. a child).
Caregivers assisting with or performing the laundering should wear PPE (disposable gloves, medical mask) when handling or washing linen and bedding.	If PPE is not available, consider using barriers, such as reusable gloves that can be washed in soap and water, followed by immersion in 0.05% (500ppm) sodium hypochlorite solution (or household bleach) for 20 minutes and use of a fabric mask. Wash the fabric mask after use with soap and warm (or boiled) water. Use caution to not burn skin in water.
Linen towels and clothing from the person with mpox should be laundered separately from the household laundry.	
Wash linen and laundry with detergent and hot water for at least 20 minutes.	The following are alternative options for washing linen, laundry, (including well-fitting fabric masks, if used): • Wash in warm water with detergent for at least 20 minutes • Wash in a warm water and sodium hypochlorite solution (household bleach) of 0.05% (500 parts per million[ppm]) for at least 20 minutes • Wash in hot water at for at least 20 minutes. • Wash in a mixture of warm water and 4.8% weight per volume (w/v) chloroxylenol solution (e.g. Dettol prepared according to manufacturer's instructions) for at least 20 minutes. • Do not clean linens in communal washing areas or in water sources such as rivers. Instead collect water and launder items separately. Discard this water in the latrine area or in covered drainage. • Hang linens in a clean or dry space, preferably in direct sunlight, until dry.

[5] Measures extracted and adapted from the WHO rapid emergency guidance: *Clinical management and infection prevention and control for monkeypox: interim rapid response guidance*, 10 June 2022. World Health Organization.

Table 5. Environmental cleaning and disinfection practices for caring with persons with mpox in the home

WHO statements: environmental cleaning[6]	Alternative options for implementation if resources are limited
Personal items, such as eating utensils and dishes, should be dedicated to the person with mpox. Avoid sharing these items.	If items must be shared, they should be thoroughly washed with soap and water (preferably warm or hot) and then disinfected by wiping with either a cloth soaked in a 0.05% (500 ppm) sodium hypochlorite solution or by immersing the items for 1 minute in a 0.05% (500ppm) sodium hypochlorite solution (household bleach). Rinse and allow them to dry. Perform hand hygiene immediately after.
The caregiver should properly mix the disinfectant solution (0.05% [500 ppm] sodium hypochlorite solution [or household bleach]) and replace it daily or sooner if the mixture is visibly soiled. See Annex 5.	If sodium hypochlorite solution is not available, then use an alternative disinfectant after performing cleaning (e.g. 70% ethanol or 4.8% w/v chloroxylenol solution).
The area where the person with mpox is staying should be cleaned and disinfected daily, preferably by the person with mpox.	The designated caregiver or community health worker cleans and disinfects surfaces or the area where the person with mpox resides.
If a caregiver is cleaning and disinfecting the area where the person with mpox is staying, they should wear PPE (disposable gloves and a medical mask) while doing so.	If PPE is not available, consider the use of a well-fitting fabric mask, reusable gloves and dedicated shoes that can be washed with soap and water, followed by immersion in a 0.05% (500 ppm) sodium hypochlorite solution (or household bleach).
Whenever cleaning and disinfecting, a person with mpox should wear gloves to prevent irritation. If they have lesions on their hands, the lesions should be covered and wearing gloves becomes even more essential.	If PPE is not available, consider the use of alternative barriers, such as reusable gloves or a well-fitting fabric mask.
All surfaces should be first cleaned with soapy water using physical friction and then disinfected by wiping with a cloth soaked in 0.05% (500 ppm) sodium hypochlorite solution (or household bleach). Surfaces should remain damp with the solution for 1 minute.	If sodium hypochlorite solution is not available, then use an alternative disinfectant after performing cleaning (e.g. 70% ethanol or 4.8% w/v chloroxylenol solution).
Damp mop the area where the person with mpox is staying; avoid dry sweeping with broom/brushes to prevent dispersion of particles.	If damp mopping is not possible (i.e. on mud floors), use mildly damp cloth that has been soaked in 0.05% (500ppm) sodium hypochlorite solution.
Spraying or fogging for routine disinfection of households is not recommended. Spraying environmental surfaces in both healthcare and non-healthcare settings, such as households, with disinfectants may not be effective in removing organic material and may miss surfaces shielded by objects, folded fabrics or surfaces with intricate designs. If disinfectants are to be applied, they should be applied with a cloth or wipe that has been soaked in disinfectant *(12)*.	

[6] Based on an mpox inactivation study commissioned by WHO. At the time of writing, data from this study are not yet published.

5. Discontinuation of home isolation

5. Discontinuation of home isolation

Table 6. IPC measures when home isolation is discontinued

WHO statements when home isolation is discontinued[7]	Alternative options for implementation if resources are limited
Persons with mpox who are cared for at home should remain in isolation and refrain from close contact with others until their skin lesions have crusted; the scabs have fallen off; and a fresh layer of skin has formed underneath.	
Once the person no longer requires isolation, the household should be cleaned and disinfected (see Table 5), focusing on the areas where the person with mpox was isolated; the areas that were used or visited by the person with mpox; and any utensils or devices the person may have used.	
Once the person no longer requires isolation, all linens, bedding and clothing of the person with mpox should be laundered carefully in detergent and hot water. If the mattress provided has a cover or a surface that can be cleaned and disinfected, then this should be done. Use caution to not burn skin in water when washing items.	If detergent is not available, wash for at least 20 minutes with soap and water (preferably hot water; if not hot, warm is better than cold). Then hang the linens in a clean, dry space, preferably in direct sunlight, until the linens are dry. If the mattress was not properly covered, or if the person with mpox is using a cloth or foam mattress without linens, it may be cleaned with soap and water (preferably hot or warm), followed by soaking with a 0.05% (500 ppm) sodium hypochlorite solution (household bleach) and left, ideally in the sun, to dry. If this is not possible, the mattress should be discarded.

[7] Measures extracted and adapted from the WHO rapid emergency guidance: *Clinical management and infection prevention and control for monkeypox: interim rapid response guidance*, 10 June 2022. World Health Organization.

6. Management of contacts of persons with mpox

6. Management of contacts of persons with mpox

Household members should be monitored, or should self-monitor, daily for the onset of signs or symptoms of a mpox infection for a period of 21 days from the last day they had contact with the person who had probable or confirmed mpox or with their potentially contaminated materials (or up to two days before the onset of symptoms, if feasible and appropriate) *(15)*.

In a household, the 21-day period would begin once the person with mpox no longer requires isolation[8]. Signs and symptoms include headache, fever, chills, sore throat, myalgia, malaise, fatigue, rash and lymphadenopathy. Contacts should monitor their temperature twice daily irrespective of symptoms *(15)*. If any symptoms appear, the person should seek care and report that they are the contact of an mpox case. Quarantine or exclusion from work is not necessary during the contact-monitoring period as long as no signs or symptoms develop *(15)*.

For additional information for surveillance, case investigation and contact tracing for mpox, see, *Surveillance, case investigation and contact tracing for mpox (monkeypox): interim guidance, 20 March 2024 (15).*

[8] Duration of isolation: people with mpox should isolate themselves until all lesions have crusted over, the scabs have fallen off, and a new layer of skin has formed.

7. Water, sanitation and hygiene (WASH) services during home care

7. Water, sanitation and hygiene (WASH) services during home care

Efforts should be made to ensure households have access to basic water, sanitation and hygiene services, including safe, treated water, functional and clean toilets, and the ability to wash hands with running water and soap (either using handwashing facilities or a Veronica bucket[9]) for cleaning hands. Safe and sufficient water, adequate sanitation and personal hygiene services will complement and enable the implementation and adherence to infection prevention and control measures at home (see Tables 7 and 8).

Coordination for improvement of WASH services in targeted households

Water and health authorities along with WASH-concerned stakeholders and partners should participate in established coordination structures in response to an mpox outbreak. The Ministry of Health can provide epidemiological information towards prioritization of households to Ministry of Water/Sanitation and WASH partners for improvement, provision and maintenance of basic WASH services in high-risk communities.

Table 7. Water supply, quantity and quality in the home

WASH statements[10]	Alternative options for implementation if water resources are limited
The household of the person infected with mpox has safe and equitable access to basic water (at least 20 litres/person/day[L/P/D]) for drinking, cooking and personal and domestic hygiene *(16)*. Additional quantities will be required for washing laundry and cleaning/disinfection of surfaces used by persons with mpox. The quantity required to meet the basic needs of a person with mpox per day is 60 litres/person *(6)*. The quantity for other family members should be counted the same as basic water service, i.e. 20 L/P/D. Calculations: 1 person with mpox (including caregiver) = 60 litres/day/person with mpox + {(20 L/P/D (other persons in household) total number of family members (excluding person with mpox)} = total amount of water required on daily basis.	15 L/P/D is the minimum amount of water required (per SPHERE standards) *(5)*. Water quantity of at least 15 L/P/D can be considered for all family members, including persons with mpox, if 60 L/P/D for a person with mpox and 20 L/P/D for other family members is not possible.

[9] For more details on Veronica bucket see: What is a Veronica Bucket? The Hunger Project (https://thp.org/news/what-is-a-veronica-bucket/ *(19)*.

[10] Extracted and adapted from: S*phere Handbook (5)*, *essential environmental health standards for health care (6)*, *guidelines on sanitation and health (7)*, *and guidelines for drinking-water quality (8)*.

WASH statements[10]	Alternative options for implementation if water resources are limited
Ensure continuous, safe water supply to households so that required quantities of water are available on a daily basis for drinking, cooking, cleaning and disinfection, laundry and maintenance of personal hygiene.	If the water supply is intermittent, increase the capacity to store water sufficient to meet the needs of all family members – including the person with mpox – for at least two days *(6)*. Alternate water sources, such as water delivery to the targeted households, can be coordinated through water supply authorities and WASH partners.
Clean water storage containers should be available for the required quantities of water. Water collection and storage containers should have narrow necks and/or covers, or other safe means of storage, drawing and handling. Storage containers should be cleaned regularly (interior and exterior surfaces) with water and soap and then disinfected *(6)*.	
Point-of-use drinking water treatment options *(6)*, such as household water treatment or chlorine tablets, are necessary if water is not treated at the source; if there is any contamination in the distribution system; or if households use water from unprotected sources. Ensure that the water is chlorinated and that free residual chlorine levels measure 0.2-0.5 mg/l (for water with a pH of less than 8 and a turbidity of less than 5 nephelometric turbidity units (NTUs)) to prevent re-contamination *(16)*. If turbidity is higher than 5 NTUs or if the water is muddy, use coagulants and a filtration process before using chlorine disinfectants *(17)*.	In situations where water cannot be treated to ensure safe quality, it should be heated to a rolling boil and kept boiling for 1 minute. It should then be allowed to cool prior to being used for drinking, cooking or hygiene (not including for laundry or cleaning the environment) *(18)*. After the water has been boiled, store it in a clean container and take measures to ensure it is not contaminated. This method of disinfection is not a preferred method due to the risk of recontamination (i.e. keep container away from animals and small children, remove water through tap or clean utensil).

Table 8. Sanitation and hygiene requirements

WASH statements[11]	Alternative options for implementation if WASH resources are limited
Households have access to improved sanitation facilities that hygienically separate human waste from human contact *(18)*, including flush or pour-flush to piped sewer systems, septic tank, pit latrines (flush toilets, pit latrine, etc.) and excreta is safely managed.[12]	
Toilets or latrines are not shared with other households. Ideally, there should be a dedicated toilet/latrine for person with mpox.	If the households are using communal toilets/latrines, cleaning and disinfection should be performed after use by the infected patient. Shared toilets/latrines used by the person with mpox should be cleaned and disinfected with 0.05% (500 ppm) of sodium hypochlorite solution (or household bleach) with 1 minute contact time by the person with mpox after each use. If a squat toilet/latrine is used, there is no need for the disinfection procedure, routine cleaning is sufficient. If the caregiver cleans and disinfects the toilet or latrine, they should wear PPE. PPE includes disposable gloves and a well-fitting medical mask. Alternatively, if disposable PPE is not available, consider a well-fitting fabric mask and reusable gloves that can be cleaned with soap and water, followed by immersion in 0.05% (500 ppm) sodium hypochlorite solution (household bleach) solution for 20 minutes.
A handwashing facility with soap and water should be available within 5 metres of toilet.	If a handwashing facility is not available, work with WASH partners for alternatives, such as a Veronica bucket[13] with soap and water *(20)*. If sufficient water is not available for handwashing, use alternate options, such as alcohol-based hand rub or waterless soap *(21)*.

[11] Extracted and adapted from: S*phere Handbook (5)*, *essential environmental health standards for health care (6)*, *guidelines on sanitation and health (7)*, *and guidelines for drinking-water quality (8)*.
[12] Safely managed: improved sanitation that are not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite- WHO UNICEF JMP.
[13] A Veronica bucket is a compact handwashing station with a bucket and basin mounted on a wooden stand.

WASH statements[11]	Alternative options for implementation if WASH resources are limited
Persons with mpox should bathe at home in their dedicated space or shower.	If a shared shower or bathing space is used, it should be cleaned and disinfected after each use by the person with mpox or dedicated caregiver following instructions from IPC measures (see Table 5).
Wastewater from showers, sinks (grey water) and toilets with water discharge (sewage) must be safely disposed of in situ or removed and treated offsite *(6)*.	

8. Waste management during home care

8. Waste management during home care

Table 9. Management of waste in the home

Statements for waste management[14]	Alternative options for implementation if waste management resources are limited
Waste created during care for persons with mpox, such as PPE, sanitary pads from infected females and used bandages, should be placed in a strong waste bag that is then closed tightly *(4)*. The waste bag should be disposed of with municipal waste if there are adequate treatment and safe disposal options (protected, lined landfills with no exposure to the environment, humans or animals). Dumping in sites that are not protected should not be considered a safe disposal option. Waste bags should be stored in a safe and secure area that is not accessible to animals, children or other household members until after the waste is collected.	If solid waste collection and disposal in a well-designed landfill or other safe disposal systems are not available, dig a pit for waste disposal (burn and bury in a protected pit away from animals and human contact). Empty the waste directly into the pit. Use same PPE as used for cleaning and disinfection of toilets. Waste-reduction strategies should be applied by minimizing the amount of waste through the use of reusable PPE where applicable or the infected person should perform the tasks to reduce the amount of PPE used by the caregiver.
Caregivers or workers handling waste should wear PPE (disposable gloves, medical masks) and wash their hands immediately afterwards with soap and water or alcohol-based handrub.	If PPE is not available for caregivers, consider the use of a fabric mask and reusable gloves that can be washed with soap and water, followed by immersion in a 0.05% (500ppm) sodium hypochlorite solution (or household bleach). Practice hand hygiene if reusable gloves are not available.
Community workers collecting and transporting the waste should wear PPE (heavy-duty gloves, heavy-duty shoes, apron and medical mask).	If heavy-duty gloves, shoes, aprons and medical masks are not available, workers should handle waste carefully using a reusable glove (e.g. hold waste bag away from body), wash and disinfect clothing worn, and practice hand hygiene with soap and water or alcohol-based handrub immediately after handling the waste. Avoid touching the face or any surfaces before handwashing.
Hand hygiene (with soap and water or alcohol-based handrub) should be performed immediately after handling waste.	

[14] Extracted and adapted from: S*phere Handbook (5)*, *essential environmental health standards for health care (6)*, *guidelines on sanitation and health (7)*, *and guidelines for drinking-water quality (8)*.

References

References

1. WHO Centre for Health Development (Kobe, Japan). (2004). A glossary of terms for community health care and services for older persons. Kobe, Japan: WHO Centre for Health Development (https://iris.who.int/handle/10665/68896, accessed 13 September 2024).
2. World Health Organization. Health workforce terminology: multilingual. Geneva: World Health Organization; 2023 (https://www.who.int/publications/m/item/health-workforce-terminology, accessed 13 September 2024).
3. Monkeypox Fact Sheet. Geneva: World Health Organization; 2024 (https://www.who.int/news-room/fact-sheets/detail/mpox, accessed 13 September 2024).
4. Clinical management and infection prevention and control for monkeypox: interim rapid response guidance, 10 June 2022. Geneva: World Health Organization; 2022 (https://iris.who.int/handle/10665/355798, accessed 13 September 2024).
5. The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response, fourth edition, Sphere Association: Geneva; 2018. (www.spherestandards.org/handbook, accessed 13 September 2024).
6. 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 September 2024).
7. Guidelines on sanitation and health. Geneva: World Health Organization; 2018 (https://iris.who.int/handle/10665/274939, accessed 13 September 2024).
8. 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 September 2024).
9. Guidance for managing ethical issues in infectious disease outbreaks. Geneva: World Health Organization; 2016 (https://iris.who.int/handle/10665/250580, accessed 13 September 2024).
10. Responding to the global mpox outbreak: ethics issues and considerations: a policy brief, 19 July 2023. Geneva: World Health Organization; 2023 (https://iris.who.int/handle/10665/371405, accessed 13 September 2024).
11. Risk communication and community engagement readiness and response toolkit: mpox. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376589, accessed 13 September 2024).
12. Strategic framework for enhancing prevention and control of mpox 2024-2027. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376839, accessed 13 September 2024).
13. Australian Government Department of Health. Interim guidance on the infection prevention and control of monkeypox at home or in a non-healthcare setting. Canberra: Australian Government Department of Health; 2022 (https://www.health.gov.au/sites/default/files/2022-12/iceg-interim-guidance-on-the-infection-prevention-and-control-of-monkeypox-at-home-or-in-a-non-healthcare-

setting.pdf, accessed 13 September 2024).

14. Cleaning and disinfection of environmental surfaces in the context of COVID-19: interim guidance, 15 May 2020. Geneva: World Health Organization; 2020 (https://iris.who.int/handle/10665/332096, accessed 13 September 2024).
15. Surveillance, case investigation and contact tracing for mpox (monkeypox): interim guidance, 20 March 2024. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376306, accessed 13 September 2024).
16. Domestic water quantity, service level and health, 2nd ed. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/338044, accessed 13 September 2024).
17. Water quality and health - review of turbidity: Information for regulators and water suppliers [Technical brief]. Geneva: World Health Organization (https://www.who.int/publications/i/item/WHO-FWC-WSH-17.01, accessed 13 September 2024).
18. Boil water. Geneva: World Health Organization; 2015. (https://iris.who.int/handle/10665/155821, accessed 13 September 2024).
19. Sanitation | JMP. (n.d.). Geneva: World Health Organization & United Nations Children's Fund (UNICEF) (https://washdata.org/monitoring/sanitation, accessed 13 September 2024).
20. Project, H. (2020, July 27). What is a Veronica Bucket? The Hunger Project (https://thp.org/news/what-is-a-veronica-bucket/, accessed 13 September 2024).
21. World Health Organization. Working together for health: the world health report 2006: overview. Geneva: World Health Organization; 2006 (https://iris.who.int/handle/10665/69256, accessed 13 September 2024).
22. World Health Organization, United Nations Children's Fund, & Zimmerman, P.-A. (2022). Considerations for community hand hygiene practices in low-resource situations. https://iris.who.int/bitstream/handle/10665/332382/WPR-DSE-2020-019-eng.pdf?sequence=5

Annexes

Annexes

Annex 1. Resources

Mpox resources

- Clinical management and infection prevention and control for monkeypox: interim rapid response guidance, 10 June 2022. Geneva: World Health Organization; 2022. https://iris.who.int/handle/10665/355798.
- Maal-Bared, R., Gerba, C., Bibby, K., Munakata, N., Mehrotra, A.S., Brisolara, K.F., Haas, C., Gary, L., Nayak, B., Swift, J. and Sherchan, S., 2022. The current multicountry monkeypox outbreak: what water professionals should know. ACS ES&T Water, 2(10), pp.1628-1638.
- Responding to the global mpox outbreak: ethics issues and considerations: a policy brief, 19 July 2023. Geneva: World Health Organization; 2023. https://iris.who.int/handle/10665/371405.
- Surveillance, case investigation and contact tracing for mpox (monkeypox): interim guidance, 20 March 2024. Geneva: World Health Organization; 2024. https://iris.who.int/handle/10665/376306.
- Risk communication and community engagement readiness and response toolkit: mpox. Geneva: World Health Organization; 2024. https://iris.who.int/handle/10665/376589.
- Strategic framework for enhancing prevention and control of mpox 2024-2027. World Health Organization; 2024. https://iris.who.int/handle/10665/376839.
- Public health advice on mpox and congregate settings: settings in which people live, stay or work in proximity. Geneva: World Health Organization; 2023. https://www.who.int/publications/m/item/public-health-advice-on-mpox-and-congregate-settings--settings-in-which-people-live--stay-or-work-in-proximity.
- Risk Guidance on Reducing Spillback of mpox (monkeypox) from Humans to Wildlife, Pet Animals, and Other Animals. Paris: World Organisation for Animal Health; 2022. https://www.woah.org/app/uploads/2023/02/woah-mpox-guidelines-en.pdf.

General IPC and WASH resources

IPC

- Standard precautions for the prevention and control of infections: aide-memoire. Geneva: World Health Organization; 2022. https://iris.who.int/handle/10665/356855.

- Transmission-based precautions for the prevention and control of infections: aide-memoire. Geneva: World Health Organization; 2022 https://iris.who.int/handle/10665/356853.
- Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization; 2016. https://iris.who.int/handle/10665/251730.
- Roadmap to improve and ensure good indoor ventilation in the context of COVID-19. Geneva: World Health Organization; 2021. https://iris.who.int/handle/10665/339857.
- Aide-memoire: environmental cleaning, waste and linen management. In: Infection prevention and control: guidance to action tools. World Health Organization. Regional Office for Europe; 2022. https://iris.who.int/handle/10665/341416.
- Hand hygiene training materials including downloadable posters. https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/training-tools.

WASH

- SPHERE standards. Geneva: Sphere; 2018. https://spherestandards.org/handbook/editions/.
- Essential environmental health standards for health care. Geneva: World Health Organization; 2008. https://iris.who.int/handle/10665/43767.
- Safe management of waste from health-care activities, Second edition. Geneva: World Health Organization; 2014. https://iris.who.int/handle/10665/85349.
- Sanitary inspections for drinking-water supplies. https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/water-safety-and-quality/water-safety-planning/sanitary-inspection-packages.
- 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.

Annex 2. Clinical considerations for homebased care

Clinical evaluation of the person with mpox

The decision regarding who can be safely isolated and monitored at home should be made on a case-by-case basis. Careful attention should be given to identifying any markers of severe disease or complications (including baseline medical conditions and other relevant risk factors) that would make admission to hospital a more appropriate referral pathway. Access and proximity to healthcare services should be considered.

For patients with mpox, there is no single common definition of "severe disease." *The WHO Clinical Management and Infection Prevention and Control for monkeypox, interim rapid response guidance*, developed in 2022, identifies several features suggestive of severe disease, or risk of severe disease (see Table A1.1). Subsequent published data have also suggested others, which are identified in the same table.

When considering whether it would be appropriate to care for a person with mpox in the home, the clinician should provide counselling to the person with mpox and their designated caregiver to ensure they understand the risks of home care and isolation. A decision about whether to manage a patient at home should be made on a case-by-case basis and be based on their clinical severity, the presence of complications, care needs, risk factors for severe disease and access to referral for hospitalization if condition deteriorates. An individualized treatment plan that includes information about the patient's condition, treatment goals, treatment options, possible side effects and the expected length of treatment is necessary.

Box A2.1. Factors to consider when assessing a person with mpox for home care

- Is the individual without any complications or any risk factors placing them at risk for severe disease? (see Table A2.1).
- Are there individuals in the home at high risk (this includes those who are pregnant, elderly, immunocompromised or have chronic/underlying co-morbidities, including but not limited to, lung, heart, liver, skin, metabolic or mental health.
- Is the person with mpox able to manage self-care (i.e. is the person ambulatory, have a designated caregiver available who is in good health, is not pregnant, has no underlying chronic conditions and has had previous smallpox vaccination or MPXV infection?)
- Are there other individuals in the household with mpox?
- Is there a community health worker or other form of community support available to support and monitor the ability of the person with mpox and household to manage isolation?
- Is there access to sufficient safe water to perform cleaning and disinfection and personal hygiene and are sufficient supplies available to mitigate transmission risks for caregivers and other household members?

The following are also in place once a decision for home care is made:

- Clear and locally agreed, established referral pathways from home to hospital, including direct contact details on how to activate them.
- Specific instructions provided to persons with mpox and their caregivers about how and when to seek help if the condition deteriorates.
    - This should include emphasizing the features listed in Row 2 of Table A2.1 and the general condition of the patient (i.e. is the patient able to eat, drink, sit and walk without support?)
- Sufficient supplies given for appropriate symptomatic treatment (e.g. for pain) and sterile dressings for lesions.
    - Indications of secondary infection may include increased redness and/or warmth around the lesion, pain or pus.
- Daily visits by a health and care worker or community health worker until symptoms have resolved to

assess the following:
    - Lesions examined daily (with appropriate IPC measures) for evidence of secondary infection.
    - The patient's willingness to engage in medical assessment should be considered.
- If a maternity patient is cared for at home: Counsel should be provided about maternal, foetal and newborn signs and care should be sought immediately if they develop worsening illness or danger signs.

Table A2.1. Risk factors and features associated with severe disease or risk of severe disease. In addition to those listed in the 2022 Interim guidance, other complications reported from mpox are identified with (*).

1	Patient groups at higher risk of severe disease or complications	• Children less than 5 years of age • Those who are pregnant • Immunosuppressed persons, such as those living with HIV (particularly those with CD4 counts of 200 or fewer) • Chronic/underlying co-morbidities including but not limited to lung, heart, liver, kidney, skin, metabolic or mental health*
2	Clinical signs and symptoms of complications recognizable by patients with mpox and their caregivers	• Nausea and vomiting that persists • Limited oral intake, dehydration • Confusion, irritability, drowsiness • Trouble breathing, fast respiratory rate • Uncontrolled or persistent fever* • Malnutrition • Extensive mucosal lesions (including rectal, genital, oropharyngeal, facial) that impair function and/or cause severe pain, such as trouble swallowing, pain with urination or defecation • Eye problems, including altered vision, painful or red eye [should be assessed by a clinician with ophthalmological experience] • Swelling in the neck causing difficulty with swallowing or breathing* • Severe and uncontrolled pain* • Secondary infection of skin, such as extreme redness, tenderness and pus or evidence of secondary infection of mpox lesions (including spread into organs)

Reference

1. Clinical management and infection prevention and control for monkeypox: interim rapid response guidance, 10 June 2022. Geneva: World Health Organization; 2022. https://iris.who.int/handle/10665/355798.

Annex 3. Health and care worker package

i) Supplies

IPC supply list for health and care workers, including community health workers.

Note: Health and care workers should avoid close contact and refrain from entering homes if PPE and hand hygiene materials (soap and clean water or alcohol-based handrub) are not available.

Health and care workers should be provided the following materials when providing home care.

Table A3.1. Health and care worker supplies

Alcohol-based handrub (60-80%)
PPE (gown, gloves, filtering facepiece respirator[1], (e.g. N95 or FFP2) and eye protection). It is preferable in this case that all PPE be disposable. If reusable PPE is provided (e.g. eye protection), then a method to decontaminate after each use, such as disinfectant wipes, must be provided.
Waste bags
Pamphlets and materials should be available in local languages and in multiple (written, oral and pictorial) and accessible formats, to support the community health worker messaging. Community health workers should remain culturally sensitive and respectful in their interactions and messaging.

ii) Training

During training, it is important to allow community members, volunteers and health and care workers to express their concerns, especially on adjustments they may need to make in their routine cleaning and hygiene practices. The more members of the community understand these measures, the more effective their ownership and implementation of these measures would be *(1)*. The voices of local leaders/elders are often the most persuasive in the community; the support mechanism can leverage that to better implement IPC and WASH measures *(2)*.

The local health system and primary health care have key roles in ensuring that IPC measures are disseminated, trained, implemented and monitored, and well-integrated in a multidisciplinary approach. Nutrition and home care should be adequate. Psychosocial support should be provided to patients in home isolation and to their families.

Caregivers and family members may also be interviewed for contact tracing and monitored for possible infection. These support activities are led by the local health office or primary health care system through partnership with community health workers and volunteers *(1)*.

Health and care workers providing support to persons with mpox and households on care and isolation for mpox should receive training on the following IPC and WASH measures:

- **Hand hygiene protocols:** Understanding how and when (specifically following the WHO 5 moments) to perform hand hygiene.
- **Minimizing exposure:** Avoid entering homes whenever possible. If necessary, maintain a distance of at least 1 metre from persons with mpox.
- **PPE:** Proper techniques for putting on and taking off PPE (including safe disposal) when entering a household or engaging in close contact.

[1] PPE is to be used when close contact is required or close contact with the person with mpox cannot be avoided. A self-seal check on the filtering facepiece respirator must be performed prior to entering the household. Details on how to perform a seal check can be found in Annex 6.

- **Cleaning and disinfection protocols:** Protocols for cleaning and disinfection (use of soap and water for cleaning and disinfectant, such as sodium hypochlorite solution (or household bleach)), and managing linen and laundry to inform the household of the isolated person with mpox on how to conduct these activities.
- **Waste management protocols:** Protocols for safe handling and disposal of infectious waste.
- **Isolation education:** Teaching individuals with mpox and their families about the importance of isolation, how to implement it effectively at home, and what steps to take if symptoms worsen.

Training in psychosocial support skills is essential for health and care workers, community health workers and frontline workers to manage the care of people affected by mpox. Training should also be provided on risk communication and community engagement, stigma awareness and the potential lasting impact of mpox[2].

References

1. Risk communication and community engagement readiness and response toolkit: mpox. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376589, accessed 13 September 2024).
2. Strategic framework for enhancing prevention and control of mpox 2024-2027. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376839, accessed 13 September 2024).

[2] People affected by mpox, including patients, survivors, family members, caregivers and frontline workers, may experience various stressors, including fear of the disease or death and physical and social isolation from family and community. The diagnosis, visible disfigurement from acute lesions, residual scarring and disability (e.g. visual impairments) associated with the disease can lead to stigmatization, isolation, loneliness, anxiety and depression. Source: National monkeypox public health response guidelines Nigeria Centre for Disease Control; 2019.

Annex 4. Essential supply list for households

Table A4.1. Essential supply list for households

Homes where cases are isolated	**Basic hygiene kit (for person with mpox and their caregiver) (average number of days for recovery)**		**Hygiene kit (including all essential items for home settings with limited resources)**
	Item	**Quantity**	• All items in basic hygiene kit should be included, in addition: • (Optional) Mattress/cot if person with mpox does not have their own bed • Dedicated linens for person with mpox • Personal hygiene kits (e.g. towel, toothbrush/toothpaste, toilet paper) for person with mpox • (Optional) Separate food utensils • Measuring cup for sodium hypochlorite preparation • Bucket • Squeegee or mop stick + mop heads
	Soap, toilet bar	100-110 g, wrapped x10 bars	
	Laundry detergent (powder)	1 Kg x2	
	Cleaning cloths (all purpose microfiber) for surfaces	5	
	Chlorine-based disinfection products or household bleach	1 L x2	
	Heavy-duty gloves(rubber/ nitrile)for cleaning and disinfection	2 pairs	
	Waste bags (10 litres,75+microns 10-12 bags per roll)	1 roll	
	Standard supported medical masks (see technical specifications) for caregiver use and person with mpox	1 box of 100	
	Disposable gloves (supported by technical standards and made with hypoallergenic materials)	1 box of 100	
	Alcohol-based handrub with at least 60% alcohol/ ethanol w/v for caregiver (if soap is not available)	1 L	
	Mpox IEC leaflets		

Annex 5. Instructions for preparing household bleach dilution solution during an mpox outbreak

Chlorine in liquid bleach comes in different concentrations; this is an example of how to dilute based on a common starting concentration. Prior to dilution, check the concentration of the bleach on hand.

Any concentration can be used to make a dilute chlorine solution by applying the following **formula**:

(% of liquid bleach/% bleach desired) − 1 = Total parts of water for each part bleach

Example: How to make 0.05% bleach solution from 3.5% for household disinfection

- Put on PPE
- Pour 285 ml of liquid bleach into a 20 L bucket and fill to the 20 L mark (or pour 1 part liquid bleach and 69 parts of water for any volume)

General considerations:

- Do not store diluted bleach in direct sunlight
- Prepare solution is a well-ventilated area
- Prepare a new beach solution daily in a container that is clean and dry
- Label bucket with concentration, date, and time
- Store bleach in a container with a lid out of the way of children and other persons
- Do not use mixed solutions more than 24 hours after they were prepared, as they are no longer effective
- Clean surfaces first with detergent and water before disinfecting them with the bleach solution
- Do not spray detergent or diluted bleach
- Do not mix different chlorine disinfectants.

Annex 6. PPE for health and care workers

Steps to put on personal protective equipment (PPE) for mpox

1 Perform hand hygiene

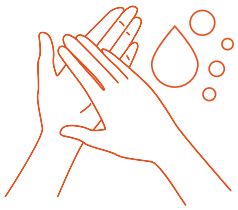
Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

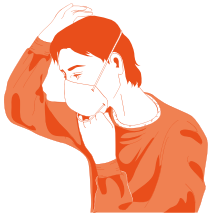
Wash hands for 40–60 seconds.



2 Put on the gown

3 Put on the respirator (N95, FFP2 or equivalent)

Perform a seal check.

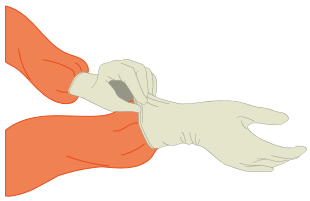


4 Put on eye protection

Put on face shield or goggles.

5 Put on gloves

Ensure glove is placed over the cuff of the gown.



PPE for mpox

World Health Organization

Source: https://www.who.int/multi-media/details/steps-to-put-on-personal-protective-equipment--for-mpox

Étapes à suivre pour mettre

un équipement de protection individuelle contre la variole simienne

1 Pratiquez l'hygiène des mains

Solution hydroalcoolique

Frottez-vous les mains pendant 20 à 30 secondes.

ou

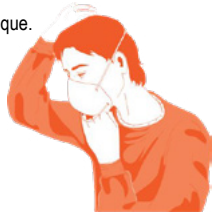
Eau et savon

Lavez-vous les mains pendant 40 à 60 secondes.

2 Enfilez la blouse

3 Mettez le masque de protection respiratoire (N95, FFP2 ou équivalent)

Vérifiez l'étanchéité du masque.



4 Mettez la protection oculaire

Mettez l'écran facial ou les lunettes de protection.

5 Enfilez les gants

Assurez-vous que le gant recouvre bien le poignet de la blouse.

Équipement de protection individuelle contre la variole simienne

Organisation mondiale de la Santé

Source: https://www.who.int/fr/multi-media/details/steps-to-put-on-personal-protective-equipment--for-mpox

Steps to remove personal protective equipment (PPE) for mpox

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

It is important to follow the steps in order

1 Take off gloves

2 Take off the gown

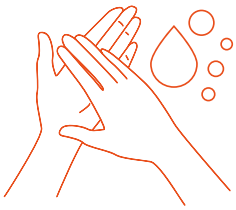
Ensure gown is pulled away from the body during removal and that clothing does not become contaminated and dispose of it safely.

3 Perform hand hygiene

Alcohol based handrub
Rub hands for 20–30 seconds.

or

Water and soap
Wash hands for 40–60 seconds.



4 Take off eye protection

Remove eye protection by lifting the strap from behind the head and dispose of safely in waste bin. If reusable eye protection is used, place safely in bucket for decontamination.

5 Take off the respirator (N95, FFP2 or equivalent)

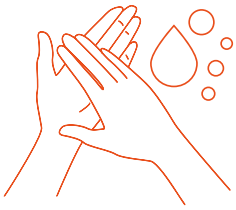
Remove by pulling the bottom strap over back of head, followed by the top strap. Avoid touching the respirator.

6 Perform hand hygiene

Alcohol based handrub
Rub hands for 20–30 seconds.

or

Water and soap
Wash hands for 40–60 seconds.



World Health Organization

Source: https://www.who.int/multi-media/details/steps-to-remove-personal-protective-equipment-(ppe)-for-mpox

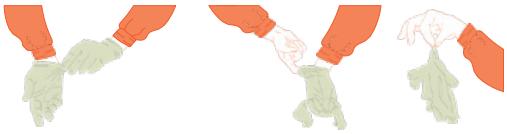
Étapes à suivre pour retirer

un équipement de protection individuelle contre la variole simienne

Assurez-vous que des conteneurs à déchets infectieux sont à disposition afin de jeter l'équipement de protection individuelle sans risque. D'autres conteneurs doivent être à disposition pour les articles réutilisables.

Il est important de suivre les étapes dans l'ordre indiqué

1 Retirez les gants



2 Retirez la blouse

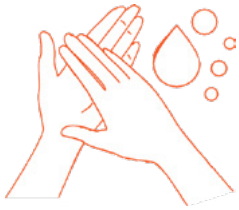
Éloignez la blouse de votre corps en veillant à ne pas contaminer vos vêtements et jetez-la avec précaution.

3 Pratiquez l'hygiène des mains

Solution hydroalcoolique
Frottez-vous les mains pendant 20 à 30 secondes.

ou

Eau et savon
Lavez-vous les mains pendant 40 à 60 secondes.



4 Retirez la protection oculaire

Retirez la protection oculaire en tirant sur l'attache à l'arrière de la tête et jetez-la avec précaution. S'il s'agit de lunettes de protection réutilisables, placez-les avec précaution dans le seau de décontamination.

5 Retirez le masque de protection respiratoire (N95, FFP2 ou équivalent)

Retirez le masque de protection respiratoire en faisant d'abord passer l'attache inférieure par-dessus votre tête, puis l'attache supérieure. Évitez de le toucher.

6 Pratiquez l'hygiène des mains

Solution hydroalcoolique
Frottez-vous les mains pendant 20 à 30 secondes.

ou

Eau et savon
Lavez-vous les mains pendant 40 à 60 secondes.

Organisation mondiale de la Santé

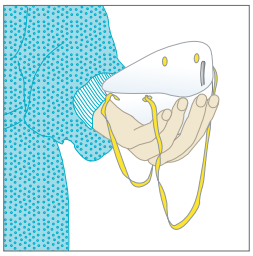
Source: https://www.who.int/fr/multi-media/details/steps-to-remove-personal-protective-equipment-(ppe)-for-mpox

HOW TO

World Health Organization

Perform a particulate respirator seal check

WHO/CDS/EPR/2007.8b



Step 1

- Cup the respirator in your hand with the nosepiece at your fingertips allowing the headbands to hang freely below your hand.

Step 2

- Position the respirator under your chin with the nosepiece up.

Step 3

- Pull the top strap over your head resting it high at the back of your head. Pull the bottom strap over your head and position it around the neck below the ears.

Step 4

- Place fingertips of both hands at the top of the metal nosepiece. Mould the nosepiece (USING TWO FINGERS OF EACH HAND) to the shape of your nose. Pinching the nosepiece using one hand may result in less effective respirator performance.

Step 5

- Cover the front of the respirator with both hands, being careful not to disturb the position of the respirator.

Step 5a: Positive seal check

- Exhale sharply. A positive pressure inside the respirator = no leakage. If leakage, adjust the position and/or tension straps. Retest the seal. Repeat the steps until the respirator is secured properly.

Step 5b: Negative seal check

- Inhale deeply. If no leakage, negative pressure will make respirator cling to your face.
- Leakage will result in loss of negative pressure in the respirator due to air entering through gaps in the seal.

Reproduced from "Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care - WHO Interim Guidelines" available at http://www.who.int/csr/resources/publications/WHO_CD_EPR_2007_6/en/index.html

Annex 7. Methodology

This document was developed based on WHO IPC recommendations for mpox, as detailed in the guidance titled *Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance (1)*. The section on WASH is based on the guiding principles found in the Sphere Handbook *(2)*, *Essential Environmental Health Standards for Health Care (3)*, *Guidelines on Sanitation and Health (4)*, and *Guidelines for Drinking-water Quality (5)*.

On September 11, a meeting was convened with the IPC in Public Health Emergencies working group, which included experts from the WASH in Public Health Emergencies Network, representatives from the WHO African Regional Office and individuals working in clinical management and IPC in several of the affected countries. This meeting facilitated the exchange of contextual expertise and the identification of priority areas for guidance adaptation.

Subsequently, the document was widely circulated to relevant WHO teams within the Community Protection Cluster and Safe and Scalable Care, working under the Incident Management Structure for the mpox response. Additionally, it was shared externally with members of the IPC in Public Health Emergencies working group, along with subject matter experts and implementing partners (see Acknowledgements section), for their review and input.

To ensure transparency and integrity, the technical officer responsible for gathering and reviewing the required Declaration of Interest (DOI) forms carefully assessed all DOIs for potential conflicts of interest. No conflicts were identified. Due diligence and risk assessment in accordance with the provisions of the Framework for Engagement with Non-State Actors (FENSA) has been conducted on entities that are part of the Global Infection Prevention and Control Network, including the IPC in Public Health Emergencies Working Group.

References

1. Clinical management and infection prevention and control for monkeypox: interim rapid response guidance, 10 June 2022. Geneva: World Health Organization; 2022 (https://iris.who.int/handle/10665/355798, accessed 13 September 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 September 2024).
3. 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 September 2024).
4. Guidelines on sanitation and health. Geneva: World Health Organization; 2018 (https://iris.who.int/handle/10665/274939, accessed 13 September 2024).
5. 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 September 2024).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