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INFECTION PREVENTION AND CONTROL PROTOCOLS FOR MONKEYPOX IN HEALTHCARE SETTINGS

July 6, 2022

BACKGROUND

Monkeypox (MPX) is a viral zoonotic disease that belongs to the Orthopoxvirus genus of the Poxviridae family. Human disease was first identified in 1970 in a 9-month-old boy in the Democratic Republic of the Congo and since then most cases have been reported across Central and West Africa.

Human-to-human transmission of Monkeypox virus occurs by direct contact with lesion material or from exposure to respiratory secretions. .

Transmission to health-care workers (HCWs) in a health setting will occur when appropriate Infection prevention and control (IPC) measures are not observed.

This guidance is intended for healthcare workers (HCWs), healthcare managers and IPC teams at all levels.

APPROACH TO PATIENT

FIRST CONTACT

A system is needed in all health facilities that at first contact will facilitate the following:

- 1) early recognition of patients (Fever and Rash or Fever and Respiratory as proxy for isolation)
- 2) immediate admission to isolation
- 3) source control of the ill patient using a well fitted medical mask (if tolerable)

The promotion of public health measures such as Hand hygiene, facial covering and respiratory hygiene are essential preventive measures for all staff, patients and visitors in the first contact area.

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STANDARD PRECAUTIONS

Health workers must follow standard precautions with all patients at all times.

Standard precautions include:

- hand hygiene
- respiratory hygiene and cough etiquette
- personal protective equipment
 - contact/droplet precautions
 - aerosol/ airborne precautions
- aseptic technique
- safe injections and sharps injury prevention
- environmental cleaning and disinfection
 - Areas within the health care facility frequently used by the patient or where patient care activities occur and patient care equipment should be cleaned and disinfected as per national or facility guidelines.
- safe handling of laundry and linen
 - Linens, hospital gowns, towels and any other fabric items should be handled and collected carefully.
- decontamination and reprocessing or reusable patient care items and equipment
- waste management.
 - All bodily fluids and solid waste of patients with MPX should be treated as infectious waste.

By following standard precautions staff will reduce the opportunities to come in contact with infectious secretions and materials in the environment. All Staff must be trained in the principles standard precautions

DISEASE BASED PRECAUTIONS

Airborne or Aerosol precautions

Airborne precautions **should be used as part of the first contact approach** to the suspected patient with fever & rash especially if varicella zoster virus (i.e. chickenpox) or measles is suspected as a differential diagnosis. Airborne/Aerosol precautions must be maintained until these diagnoses are excluded.

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Airborne precautions are to be used if aerosol-generating procedures (AGPs) are performed for these patients.

Equipment required:

- Respirator/N95
- Gown
- Gloves
- Face Shield
- Hand hygiene

Figure 1: Personal protective equipment used for Airborne/ Aerosol precautions



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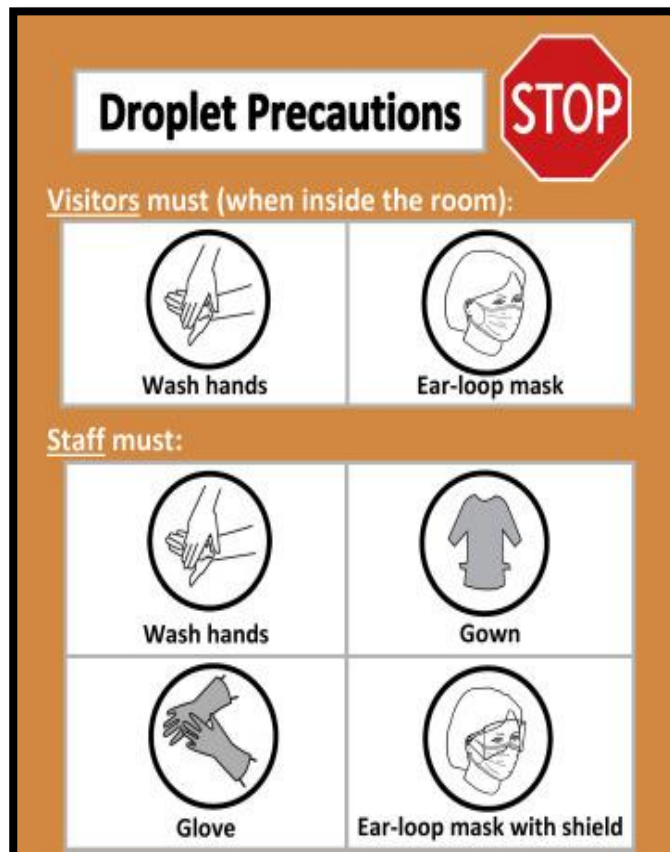
Contact and droplet precautions

Contact and droplet precautions are to be implemented for all confirmed patients with MPX.

Equipment required:

- Medical mask
- Gown
- Gloves
- Face shield
- Hand hygiene

Figure 2: Personal protective equipment used for droplet precautions



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Figure 3: Personal protective equipment used for contact precautions



GENERAL ADVICE FOR COLLECTING AND HANDLING LABORATORY SPECIMENS

All specimens collected for laboratory investigations should be regarded as potentially infectious.

HCWs who collect, handle, or transport clinical specimens should adhere rigorously to the following standard precaution measures and biosafety practices to minimize the possibility of exposure to pathogens

The appropriate personnel protective equipment (PPE) must be worn:

- a. Long sleeve gown



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- b. Internal gloves
- c. Eye protection and mucous membrane protection
- d. N95 Respirator**
- e. External gloves

Hands should be thoroughly washed before and after specimen collection

*** The use of a respirator is recommended based on the differential diagnosis of measles and chickenpox which are transmitted by airborne/aerosol methods. As such Healthcare workers must utilize these precautions when taking a sample until they have been ruled out.*

GENERAL ADVICE FOR DONNING AND DOFFING OF PERSONAL PROTECTIVE EQUIPMENT

Health workers should perform hand hygiene according to the WHO Your 5 moments for hand hygiene, including prior to putting on and after removing PPE.

A new set of PPE is needed when care is given to a different patient

PPE must be discarded after use and **NOT** reused.

HCWs should refrain from touching eyes, nose, or mouth with potentially contaminated gloved or bare hands;

GENERAL ADVICE FOR EQUIPMENT

Equipment should ideally be either single-use or dedicated equipment (e.g. Stethoscopes, blood pressure cuffs and thermometers).

- If equipment needs to be shared among patients, clean and disinfect it between use for each individual patient (e.g., by using ethyl alcohol 70%)
- Cover exposed lesions when others are in the room and if the patient can tolerate.

GENERAL ADVICE ON MOVEMENT OF PATIENT

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Avoid moving and transporting patients out of their room or area unless medically necessary. Ideally a designated portable X-ray equipment or other designated diagnostic equipment should be used.

Cover the lesions when transporting patient

Cover areas of instrument that may come in contact with skin.

If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and ensure that HCWs who are transporting patients perform hand hygiene and wear appropriate PPE as described in this section

Notify the area receiving the patient of any necessary precautions as early as possible before the patient's arrival

Clean all surfaces after use. Follow manufacturers' guidance on materials for cleaning and process.

GENERAL ADVICE ON CLEANING AND DISINFECTION

Routinely clean and disinfect surfaces which the patient is in contact

Always clean surfaces first with soap and water followed by disinfection with an approved disinfectant with virucidal activities (follow national or facility guidelines).

0.5% Bleach or 70 % alcohol are effective disinfectants against MPX virus

Disinfectants should be prepared and applied to surfaces according to manufacturers' instructions

To prevent cross-contamination, cleaning must always be carried out from the cleanest area first and finish in the dirtiest area last, and always clean from top to bottom.

Particular attention should be paid to toilets and frequently touched surfaces

PPE needed includes coveralls, apron, industrial gloves and a mask

GENERAL ADVICE FOR MANAGEMENT OF LINEN AND LAUNDRY

Carefully lift and roll linens. Do not shake linen or laundry.

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Linen/ Laundry should be carefully placed into designated clear container or bag which is tagged for transport to laundry services. Notify laundry of any necessary precautions as early as possible before the arrival of the laundry.

Linen can be machine washed with hot water at > 60°C with laundry detergent and dried according to routine procedures, preferably at high heat.

If machine washing is not possible and hot water is not available, linens can be soaked in a large drum using a stick to stir with care taken to avoid splashing. The linens should be soaked in chlorine*, rinsed with clean water and allowed to fully dry.

Workers in laundry area should follow standard and transmission-based precautions including:

- minimize handling, in particular avoid shaking of linen and laundry;
- wear gloves, apron or gown, a medical mask

GENERAL ADVICE FOR MEDICAL WASTE

Waste should be segregated (general waste, infectious waste and sharps) and placed in appropriate bins at point of use.

Management and disposal of waste (including PPE) should be done in accordance with local regulations for infectious waste.

Healthcare workers must use PPE when handling waste (Coverall, Apron, Industrial gloves and mask)



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**DROPLET/ CONTACT PRECAUTION
PPE CHECKLIST**

1. **Long sleeve gowns** (Single use, fluid resistant, disposable, length mid-calf to cover the top of the boots, light colours preferable to better detect possible contamination, thumb/finger loops or elastic cuff to anchor sleeves in place)

Yes No

2. **Gloves** (nitrile, powder-free, non-sterile. Cuff length preferably reach mid-forearm)

Yes No

3. **Eye protection** (Made of clear plastic and provides good visibility to both the wearer and the patient, Adjustable band to attach firmly around the head and fit snugly against the forehead, Fog resistant (preferable), Completely cover the sides and length of the face, May be re-usable (made of robust material which can be cleaned and disinfected or disposable.)

Yes No

4. **Surgical Facemasks** (Medical/surgical mask, high fluid resistance, good breathability, internal and external faces should be clearly identified, structured design that does not collapse against the mouth (e.g. duckbill, cup shaped)

Yes No



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**AEROSOL PRECAUTION
PPE CHECKLIST**

1. **Long sleeve gowns** (Single use, fluid resistant, disposable, length mid-calf to cover the top of the boots, light colours preferable to better detect possible contamination, thumb/finger loops or elastic cuff to anchor sleeves in place)
Yes No
2. **Gloves** (nitrile, powder-free, non-sterile. Cuff length preferably reach mid-forearm)
Yes No
3. **Eye protection** (Made of clear plastic and provides good visibility to both the wearer and the patient, Adjustable band to attach firmly around the head and fit snugly against the forehead, Fog resistant (preferable), Completely cover the sides and length of the face, May be re-usable (made of robust material which can be cleaned and disinfected or disposable.)
Yes No
4. **Respirator** (N95 ,Good breathability with design that does not collapse against the mouth (e.g. duckbill, cup shaped)
Yes No




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APPENDIX 1: GUIDELINES FOR PPE DONNING AND DOFFING PROCEDURES

SEQUENCE FOR DONNING PERSONAL PROTECTIVE EQUIPMENT (PPE)	SECUENCIA PARA PONERSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)
<p>The type of PPE used will vary based on the level of precautions required; e.g., Standard and Contact, Droplet or Airborne Infection Isolation.</p>	<p>El tipo de PPE que se debe utilizar depende del nivel de precaución que sea necesario; por ejemplo, equipo Estándar y de Contacto o de Aislamiento de infecciones transportadas por gotas o por aire.</p>
<p>1. GOWN</p> <ul style="list-style-type: none"> Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back Fasten in back of neck and waist 	<p>1. BATA</p> <ul style="list-style-type: none"> Cubra con la bata todo el torso desde el cuello hasta las rodillas, los brazos hasta la muñeca y dóblela alrededor de la espalda Atesela por detrás a la altura del cuello y la cintura
<p>2. MASK OR RESPIRATOR</p> <ul style="list-style-type: none"> Secure ties or elastic bands at middle of head and neck Fit flexible band to nose bridge Fit snug to face and below chin Fit-check respirator 	<p>2. MÁSCARA O RESPIRADOR</p> <ul style="list-style-type: none"> Asegúrese los cordones o la banda elástica en la mitad de la cabeza y en el cuello Ajústese la banda flexible en el puente de la nariz Acomódesela en la cara y por debajo del mentón Verifique el ajuste del respirador
<p>3. GOGGLES OR FACE SHIELD</p> <ul style="list-style-type: none"> Place over face and eyes and adjust to fit 	<p>3. GAFAS PROTECTORAS O CARETAS</p> <ul style="list-style-type: none"> Colóquesela sobre la cara y los ojos y ajústela
<p>4. GLOVES</p> <ul style="list-style-type: none"> Extend to cover wrist of isolation gown 	<p>4. GUANTES</p> <ul style="list-style-type: none"> Extienda los guantes para que cubran la parte del puño en la bata de aislamiento
	
<p>USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION</p>	<p>UTILICE PRÁCTICAS DE TRABAJO SEGURAS PARA PROTEGERSE USTED MISMO Y LIMITAR LA PROPAGACIÓN DE LA CONTAMINACIÓN</p>
<ul style="list-style-type: none"> Keep hands away from face Limit surfaces touched Change gloves when torn or heavily contaminated Perform hand hygiene 	<ul style="list-style-type: none"> Mantenga las manos alejadas de la cara Limite el contacto con superficies Cambie los guantes si se rompen o están demasiado contaminados Realice la higiene de las manos



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SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)	SECUENCIA PARA QUITARSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)
<p>Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.</p> <p>1. GLOVES</p> <ul style="list-style-type: none"> ■ Outside of gloves is contaminated! ■ Grasp outside of glove with opposite gloved hand; peel off ■ Hold removed glove in gloved hand ■ Slide fingers of ungloved hand under remaining glove at wrist ■ Peel glove off over first gloved ■ Discard gloves in waste container <p>2. GOGGLES OR FACE SHIELD</p> <ul style="list-style-type: none"> ■ Outside of goggles or face shield is contaminated! ■ To remove, handle by head band or ear pieces ■ Place in designated receptacle for reprocessing or in waste container <p>3. GOWN</p> <ul style="list-style-type: none"> ■ Gown front and sleeves are contaminated! ■ Unfasten ties ■ Pull away from neck and shoulders, touching inside of gown only ■ Turn gown inside out ■ Fold or roll into a bundle and discard <p>4. MASK OR RESPIRATOR</p> <ul style="list-style-type: none"> ■ Front of mask/respirator is contaminated — DO NOT TOUCH! ■ Grasp bottom, then top ties or elastics and remove ■ Discard in waste container 	<p>Con la excepción del respirador, quítese el PPE en la entrada de la puerta o en la antecala. Quítese el respirador después de salir de la habitación del paciente y de cerrar la puerta.</p> <p>1. GUANTES</p> <ul style="list-style-type: none"> ■ ¡El exterior de los guantes está contaminado! ■ Agarre la parte exterior del guante con la mano opuesta en la que todavía tiene puesto el guante y quíteselo ■ Sostenga el guante que se quitó con la mano enguantada ■ Deslice los dedos de la mano sin guante por debajo del otro guante que no se ha quitado todavía a la altura de la muñeca ■ Quítese el guante de manera que acabe cubriendo el primer guante ■ Arroje los guantes en el recipiente de desechos <p>2. GAFAS PROTECTORAS O CARETA</p> <ul style="list-style-type: none"> ■ ¡El exterior de las gafas protectoras o de la careta está contaminado! ■ Para quitárselas, tómelas por la parte de la banda de la cabeza o de las piezas de las orejas ■ Colóquelas en el recipiente designado para reprocessar materiales o de materiales de deshecho <p>3. BATA</p> <ul style="list-style-type: none"> ■ ¡La parte delantera de la bata y las mangas están contaminadas! ■ Desate los cordones ■ Tocando solamente el interior de la bata, pásela por encima del cuello y de los hombros ■ Voltee la bata al revés ■ Dóblela o enróllela y deséchela <p>4. MÁSCARA O RESPIRADOR</p> <ul style="list-style-type: none"> ■ La parte delantera de la máscara o respirador está contaminada — ¡NO LA TOQUE! ■ Primero agarre la parte de abajo, luego los cordones o banda elástica de arriba y por último quítese la máscara o respirador ■ Arrójela en el recipiente de desechos
PERFORM HAND HYGIENE IMMEDIATELY AFTER REMOVING ALL PPE	EFECTÚE LA HIGIENE DE LAS MANOS INMEDIATAMENTE DESPUÉS DE QUITARSE CUALQUIER EQUIPO DE PROTECCIÓN PERSONAL



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