REPUBLIC OF CYPRUS
MINISTRY OF HEALTH

MEDICAL AND
PUBLIC HEALTH SERVICES
1449 NICOSIA

Protocol for management of monkeypox cases and their close contacts in the Republic of Cyprus

Introduction

Monkeypox is a zoonotic disease and as of this moment is the most widespread orthopoxvirus disease in humans, since the eradication of smallpox and the cessation of total inoculation against it.

Monkeypox is not easily transmitted between humans, but is mostly transmitted through animals. Between humans, the virus can be transmitted through respiration droplets during immediate and prolonged face to face or physical contact. Additionally, monkeypox can be transmitted with direct contact with contaminated bodily fluids of an infected person, contact with mucosa or broken skin, with open sores or through items contaminated with the virus, such as bedding, sex toys, or clothing. Sexual transmission of monkeypox has been proven, but bibliography describes a 2017 epidemic in Nigeria, where it was suggested that sexual transmission provided a reasonable transmission path, as it involved close skin to skin contact during sex, or transmission through genital fluids. There are indications that cases in non-endemic areas in recent months may have occurred in persons having sexual contact with multiple partners (https://www.ecdc.europa.eu/sites/default/files/documents/ECDC-WHO-Risk-communication-community-engagement-monkeypox-outbreak-Europe.pdf).

Timely diagnosis, isolation and effective location and contact tracing is key to combat the spread of the virus in the community.

Protection from transmission

As mentioned above, monkeypox transmission in humans can occur after prolonged contact with respiratory droplets, and infected wound products. Therefore, appropriate Personal Protection Equipment (PPE) is required for all healthcare professionals examining suspected cases, caring for monkeypox patients or handling contaminated materials (clothes, bedding etc.), or laboratory samples. PPE includes: robes, single-use gloves, high respiratory protection masks FFP2, eye protection or face shield, and shoe covers. The availability of sufficient quantities of PPR in healthcare facilities will need to be monitored on a state level.

At individual level, direct contact without PPE with skin lesions, bedding or clothes, bodily fluids or blood, as well as any type of physical contact (kiss, embrace, sexual contact etc) with a suspected or confirmed case must be avoided.

Disinfection

Orthopoxvirus, including monkeypox, is extremely resilient to a low moisture environment, increased temperature, and pH. This results in materials from infected persons or infected objects (e.g. bedding) to be infectious for months, even years.

Despite these characteristics, the virus is sensitive to common disinfectants, though it may be less sensitive in organic disinfectants compared to other viruses, due to its reduced lipid content.

Room clean-up where occupancy by a confirmed case occurred, must be done without dust or aerosols being kicked into the air with common cleaning products. After clean-up, all surfaces must be disinfected with the use of 0,1 % sodium hypoclorite (NaClO, 1000 ppm) (dilution: 33ml chlorine in 1 liter of water where domestic chlorine is used, usually at an initial concentration of 3%).

Special attention must be paid to frequently touched surfaces (e.g. door handles), as well as toilets. Infected clothing and linen must be collected and washed at 60°C. Carpets, curtains and other fabric furnishings can be steam-cleaned.

The use of single-use cleaning equipment is recommended (e.g. towels). If single-use cleaning equipment is not available, cleaning materials (cleaning cloth, scrubbing sponges etc.) must be placed in a disinfectant dilution, effective against viruses, or in 0.1% sodium hypochlorite. If this is not possible, the equipment must be discarded.

Gauzes and other equipment which carries bodily fluids from a monkeypox patient must be treated as infectious.

Exposure of pets

Public health authorities are working together with veterinary authorities to ensure the possibility of the quarantining of pets, mainly mammals who have been exposed, or are at risk of being exposed to a monkeypox case. Pet rodents must ideally be isolated in monitored facilities, which comply with isolation (e.g. laboratories) and ensure good living conditions for the animals (e.g. state facilities or animal hospitality facilities), and be PCR tested for exposure prior to the end of quarantine. Euthanasia must be treated as a last resort, only used in cases where testing and/or isolation are not feasible.

Other types of mammals kept as pets could be isolated at home, if good quality of life can be maintained (e.g. availability of closed outside space for dogs, regular veterinary checks to assess their health, discouraging people from visiting, ensuring the animals cannot escape the house).

In the event that a person has been diagnosed with monkeypox or is a symptomatic close contact, they should avoid contact with animals throughout their self-isolation period.

For more information regarding management of pets and other animals, please contact State Veterinary Services.

Monkeypox definitions

Confirmed case

Person with confirmed laboratory PCR [1] diagnosis of monkeypox infection, with symptom onset March 1st onwards.

Suspected case

(1) Person with skin lesion of unknown cause in any part of the body

AND

one or more monkeypox symptom from March 1st onwards:

- fever (usually high >38,5°C)
- headache
- backache
- fatigue
- lymphadenopathy (localized or generalized)

AND

one of the following:

- positive result in testing for Orthopoxvirus [2]
- epidemiological connection to confirmed or suspected monkeypox case, 21 days prior to symptom onset
- reported travel history in countries endemic to monkeypox 21 days prior to symptom onset
- person (regardless of sexual orientation) with multiple sexual partners 21 days prior to symptom onset

OR

A person with an unexplained generalized or localized maculopapular or vesiculopustular rash with centrifugal spread, with lesions showing umbilication or scabbing, lymphadenopathy and one or more other MPX-compatible symptoms

AND

Lymphadenopathy

AND

one or more of the following symptoms consistent to monkeypox:

- fever (usually high >38,5°C)
- headache
- backache
- fatigue

1. (1) PCR testing specially for the detection of monkeypox virus or (2) PCR testing specially for the detection of Orthopoxvirus genotype viruses, then confirmed through nucleotide sequencing as monkeypox

2. PCR testing especially for the detection of Orthopoxvirus genotype viruses without nucleotide sequencing, electronic microscopic evaluation, serological test

NOTE: Every potential case must undergo PCR laboratory testing. Upon negative laboratory test result, patients cease being regarded as monkeypox cases

<u>Οδηγίες διαχείρισης περιστατικών Ευλογιάς των Πιθήκων (monkeypox)</u>

1. **Treatment of suspected and confirmed monkeypox cases:**

All suspected cases (see definition above) will need to be assessed by a doctor (Personal Doctor, Dermatologist, Pediatrician etc) and in the case where the treating doctor strongly suspects monkeypox, the case will need to be referred to the Accident and Emergency Department of the nearest state hospital. Once there, further assessment will be conducted, and if deemed necessary, the case will be transported to Nicosia General Hospital or Makarios Hospital (Reference Hospitals) for testing and diagnosis. At the Reference Hospital, a sample will be taken, and until issuing of results, the suspected case will need to remain at the facility for observation and

additional testing. The result of the monkeypox test will determine the steps to follow. If the result is negative, the person is no longer a suspected case and is released. If the result is positive then the person is considered a confirmed case and either goes home to self-isolate, or is hospitalized at Nicosia General Hospital, or Makarios Hospital (in cases of children), in a specially configured chamber if deemed necessary by treating doctors. In the event that confirmed cases are unable to self-isolate at home (travelers, immigrants in group lodgings etc), they will be transported to a state quarantine facility. The first cases to be identified in the Republic of Cyprus may self-isolate at Reference Hospitals for monitoring.

Recently diagnosed cases will need to be subjected to medical assessment for disease severity and risk factors (e.g. underlying conditions or medications affecting immune response, untreated HIV infection etc). Those in increased risk of serious illness may require hospitalization and/or treatment with antiviral medication (see Treatment protocol). The majority of reported monkeypox cases thus far in this outbreak have been mild with localized disease and self-isolating symptoms. Therefore, hospitalization is not always required, unless the patient's clinical condition demands it.

Positive cases should avoid contact with immunosuppressed individuals until their skin lesions heal. The positive case will be monitored daily by the Epidemiological Surveillance Unit and Communicable Diseases Committee through telephone calls and may temporarily leave their home (e.g. for medical appointments), under the condition that they wear a medical grade face mask and their skin lesions are covered (e.g. long sleeves and trousers).

Contact with pet mammals, and especially pet rodents (mice, rats, hamsters, gerbils, guinea pigs, squirrels etc) must be avoided, due to the possibility of transmission from humans to pets. Any recent contact with these pets must be noted and communicated with veterinary services for instructions.

Positive cases living at home in self-isolation who notice a worsening of symptoms and need to be transported to a hospital, will be transported to Nicosia General Hospital or Makarios Hospital using their own vehicles, or through a predetermined procedure using an ambulance.

Confirmed cases will need to be isolated until their vesicles and pustules subside, which will signal the end of transmissibility. They should remain in their own room if self-isolating at home, and will need to use special home goods (clothes, bedding,

towels, food containers, dishes, glasses), which must be not be shared with other members of the household (as mentioned in paragraph “disinfection”).

The release of cases must be done after an assessment by the treating doctor/personal doctor, who will confirm that skin lesions have healed. This period ranges from 2 to 4 weeks.

2. Clinical condition

2.1. Clinical appearance can be separated in two stages:

The incubation period of monkeypox is usually 5 to 21 days. The disease usually lasts from 2 to 4 weeks. It typically begins with fever, muscle aches, fatigue and headache. Within three days since the appearance of prodromal symptoms, a centrifugal maculopapular rash appears at the location of primary infection and then quickly spreads to other areas of the body. Palms and soles are involved in cases of rampant rash, which is typical of the disease. Skin lesions evolve, usually with 12 days, at the same time following a progression from the stage of pale spots to papules, blisters and crust, before falling off the skin. Skin lesions can be itchy and may present with secondary bacterial infection if scratched. Skin lesions in the oral or ophthalmic mucosa may appear. Prior to, and parallel with the skin lesion, lymphadenopathy is observed in a number of patients, which is usually not present in smallpox or chickenpox. The appearance of a skin rash is considered as the beginning of the infectious period. However, it is believed that persons with prodromal symptoms may also transmit the virus.

Risk is especially elevated for very young children, pregnant people, elderly or immunosuppressed individuals who are close contacts of confirmed cases, due to the more serious effect the disease has on these groups.

1. **prodromal fever stage** (lasting 0-5 days) is characterized by fever, intense headache, lymphadenopathy (swelling of lymph nodes), back ache, muscle aches, and intense weakness/fatigue. Lymphadenopathy is a typical finding for monkeypox compared to other diseases which may initially appear similar (smallpox, chickenpox, measles)
2. **skin rash stage** where the skin rash usually appears within 1-3 days from fever onset. The rash tends to be concentrated on the face and limbs as opposed to the torso. It affects the face (in 95% of cases) and the palms and soles (in 75% of cases). Oral mucosa (in 70% of cases), genitals (30%), conjuctivae (20%) and the cornea may be affected. The rash evolves from spots (flat rashes), to papules (slightly elevated lesions), bubbles (filled with clear fluid), blisters

(filled with yellow fluid), and crust which dries and drops off the skin. The number of lesions can vary from several, to thousands. In serious cases, lesions may conjoin and cause large areas of skin to slough off.

- Sexually transmissible monkeypox: patients may not present with the classic prodromal fever and skin rash spread to the face and limbs. In such cases, the rash may initially appear in the genital or anus area and/or may initially appear in the lips and surrounding mouth area. The most typical characteristics and skin rash spread may appear at a later stage. In these cases, systemic fever characteristics, fatigue and headache, are not as apparent as the more typical presentation of the disease.

Monkeypox is usually a self-isolating disease, with symptoms lasting between 2 to 4 weeks. Serious cases appear more frequently in children and are related to the extend of exposure to the virus, the physical condition of the patient, and the nature of complications. Underlying immunodeficiencies can lead to more severe outcomes. Even though inoculation against smallpox has proven efficient in the past, individuals today under the age of 40 to 50 (depending on the country) may be more susceptible to it due to the cessation of vaccination campaigns worldwide since the disease was eradicated.

Complications from monkeypox may include secondary infections, bronchopneumonia, sepsis, encephalitis and cornea infection with subsequent vision loss. The degree in which asymptomatic infection occurs is unknown.

Mortality rate for monkeypox has historically ranged from 0% to 11% in the general population, and higher among children. In recent times, mortality rate has ranged from 3% to 6%.

3. Criteria for clinical suspicion of monkeypox

Identifying the disease requires a high level of clinical suspicion. Clinical diagnosis is extremely difficult during the entry stages (prodromal symptoms), unless the patient is a close contact with an already identified (suspected of confirmed) case or is part of a high-risk group. Generally, sporadic incidents will not be identified until the typical skin lesions to the face start to appear (or perhaps even longer, due to the delay in appearance, or conflation with chickenpox).

The key characteristics which must immediately raise the suspicion for monkeypox are:

- **Rash:** A typically spread, often very itchy rash, appearing 1-3 days (but occasionally up to 5 days) following fever/prodromal symptom onset, starting from the face and spreading centrifugally, resulting in peripheral allocation (face, palms, soles, torso in milder cases, and perigenital area).
- **Travel:** Recent travel from an African country known to be endemic for monkeypox, or recent contact with animals or animal products from animal populations from endemic African countries.
- **Sexual history:** Sexual contact history with a confirmed case or person identifying as gbMSM with a rash on the lips, genitals or anus, +/- other obvious symptoms of monkeypox and with no prior reporter history of sexual contact with a confirmed case.

3. Ambulance transportation protocol for cases either under investigation or that have been confirmed for monkeypox

The decision to transport a patient is taken by the doctor of the public or private hospital that has assessed the patient, following communication with the doctor in charge at the destination hospital (Nicosia General Hospital and Makarios Hospital for children).

For transportation of these cases, the exclusion of pregnant health workers from the ambulance crew is recommended.

3.1. Instructions

1. Patient transport is done by ambulance or private vehicle if the patient is in a position to drive
2. Ambulance crew briefing of ambulance (nursing and rescue crew) for the case being investigated
3. Ambulance preparation to include the minimum basic equipment for each case (preparation of minimum equipment required)
4. Use of appropriate PPE by the ambulance crew throughout the call
5. Provision of a surgical mask to the patient for immediate use
6. Primary assessment of the patient at the pick-up location
7. Provision to the patient of sanitary napkins and individual waste disposal bag
8. Briefing of the patient and the patient's family
9. Transportation of the patient and secondary assessment in the ambulance
10. Assurance of good air ventilation during transportation

11. Constant communication with the ambulance dispatch centre for any worsening of the patient's clinical condition, and also for the estimated time of arrival to the destination
12. Simultaneous transport of another patient is not permitted.
13. Cessation of communication between driver cabin and patient cabin
14. Use of single-use clothing in the ambulance
15. Food and drink consumption in the ambulance is forbidden
16. Delivery pf patient to a predetermined location for examination
17. Removal of PPE and appropriate disposal of it in the special bags for dangerous infectious medical waste bins
18. Compliance with hand hygiene rules
19. Ambulance disinfection

14. Declaration of monkeypox case and close contacts management

Cases (suspected or confirmed) must be declared by the treating doctor or lab technician through the declaration form for monkeypox, or the immediate declaration of communicable disease case form, within 24 hours from identification.

Following the declaration, communication will be established by the Epidemiological Surveillance Unit and Communicable Diseases Committee, to fill in the investigative form.

Case contacts are classified either as close, or occasional. Close contacts are contacts defined as complying with the following criteria, with last contact taking place up to **one** day prior to the appearance of a rash or prodromal symptom. The definitions and management of contacts are outlined in the following table.

Management of monkeypox contacts		
Type of contact	Description	Recommendations for management

Close contact	· Sexual partner (any sexual contact and/or common use of sex toys) · Person(s) living in the same household or similar environment (e.g. camping, common dwelling) · Person(s) with joint use of clothing, cookware etc., while the confirmed case exhibited a rash · Person(s) jointly using workspace/office for long periods of time · Carers of monkeypox case during the period where the case exhibited symptoms without the use of PPE · Οι επαγγελματίες υγείας που είχαν επαφή με κρούσμα ευλογιάς των πιθήκων (δερματικές βλάβες ή παρατεταμένη επαφή πρόσωπο με πρόσωπο) χωρίς τη χρήση κατάλληλων Ατομικών Προστατευτικών (ΑΠΕ) · Healthcare professionals or other persons sustaining injury with a sharp object, or who have been exposed to bodily fluids of a monkeypox patient, or who have been exposed to airborne respiration droplets without the use of PPE · Laboratory staff exposed to a workplace accident with a sample containing the virus (spray of bodily fluids, injury with sharp object, exposure to airborne material etc) · Co-passengers of a confirmed case occupying surrounding seats, in airplanes, buses or trains	· Self-monitoring for temperature or appearance of other symptoms (headache, back ache etc) or appearance of a new rash of unknown origin for 21 days since last exposure. Will be reminded and recorded over the phone by Epidemiological Surveillance Unit and Communicable Diseases Committee on a daily basis (annex 4) if possible. · In the event that a close contact develops a rash, fever or other disease symptom within 21 days since last contact with a confirmed case, self-isolation is recommended (at home) and the person will be referred for PCR testing and will refrain from social contact and sexual activities until a monkeypox diagnosis is ruled out · Strict compliance with personal hygiene rules, with emphasis on the careful washing of hands and application of measures to prevent disease transmission through the respiratory tract · Abstinence from sexual activities and avoidance of close body contact for 21 days or until the suspicion of monkeypox diagnosis is eliminated · Avoidance of contact with household mammals for 21 days or until the suspicion of monkeypox diagnosis is eliminated · Recommendation for vaccination

Occasional contact	· Person(s) having had brief social contact with the case, without body contact · Co-workers of confirmed case who do not share an office · Person(s) using the same public transportation as the case but do not sit in adjacent seats · Person(s) using common gyn equipment, saunas or sanitation areas, without body contact with the case · Persons within the case's social network · Healthcare professionals who have had contact with a monkeypox case while wearing PPE	Depending on risk assessment, some of these contacts may be instructed to self-monitor for temperature measuring, or for the appearance of other symptoms (headache, back ache etc.) or the appearance of a new rash of unknown cause for 21 days since last exposure

Close and occasional contacts are not obliged to self-isolate at the initial stage, but investigative monitoring of symptoms through daily telephone interviews from the Ministry of Health will be conducted.

In the case that contacts develop symptoms they must immediately self-isolate and must be medically assessed as potential cases. If they develop a skin rash, sampling must be conducted by the Reference Hospital.

Vaccination of close contacts will be available towards the end of August 2022, and an option will be given to all close contacts to do so by 4 days since the first contact with a case. The vaccination period may be extended to 14 days following contact with a confirmed case, to reduce the possibility of serious symptoms onset among infected contacts. Vaccination will be prioritized to asymptomatic close contacts, and healthcare professionals who have come into contact with a case. Contacts will be traced either though the confirmed case, or by officers of the Epidemiological Surveillance Unit and Communicable Diseases Committee, and they will be notified by SMS regarding relevant protocols. In this SMS, a unique code to be used for arranging vaccination appointments will be displayed. Vaccination must take place after coordination of the interested party with the predetermined vaccination centres.

You can contact the Epidemiological Surveillance Unit by email: contacttracing2@moh.gov.cy and by telephone at the following numbers: 22605678, 22514264, 22514258, 22514259, 22771923 (Monday-Sunday 08:00-20:00)

Self-isolating at home may be monitored by either on-site or telephone checks by Cyprus Police. Persons self-isolating at home are required to comply with regulations. In case of non-compliance, they may be exposed to legal actions.

Medical and Public Health Services

Ministry of Health

02/08/2022

Sources:

1. Considerations for contact tracing during the monkeypox outbreak in Europe, 2022. https://www.ecdc.europa.eu/sites/default/files/documents/Considerations-for-Contact-Tracing-MPX_June%202022.pdf
2. join ecdc who regional office for europe monkeypox surveillance bulletin. https://monkeypoxreport.ecdc.europa.eu/
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