Risk Assessment Group

CONSULTATIVE SIGNAL ASSESSMENT
PRIMARY RISK ASSESSMENT
EVIDENCE BASED RISK ASSESSMENT
PUBLIC HEALTH EVENT ASSESSMENT

MONKEYPOX MULTI-COUNTRY OUTBREAK, MAY 2022

Date of the signal	Date of the PRA	Signal provider	Experts consultation	Method
07/05/2022: first case (imported) 17/05/2022: cases in second country	17/05/2022 – final 20/05/2022	UK/ECDC/ Portugal	**Permanent experts:** Caroline Boulouffe (AViQ), Wouter Dhaeze (AZG), Naïma Hammami (AZG), Nicolas Ledent (COCOM), Tinne Lernout (Sciensano), Patrick Smits (AZG), Cecile van de Konijnenburg (FOD), Dirk Wildemeersch (AZG) **Specific experts :** Sabine Allard (UZ Brussel), Nathalie Ausselet (CHU UCL Namur), Leïla Belkhir (St Luc UCL), Isabel Brosius (ITG), Bénédicte Delaere (CHU UCL Namur), Agnes Libois (CHU-St Pierre), Ula Maniewski (ITG), Charlotte Martin (CHU-St Pierre), Christelle Meuris (ULiège), Carole Schirvel (CHIREC), Patrick Soentjes (ITG), Dominique Van Beckhoven (Sciensano), Dorien Van den Bossche (ITG), Marjan Van Esbroeck (ITG), Steven Van Gucht (Sciensano), Marc Van Ranst (UZ Leuven), Koen Vercauteren (ITG), Erika Vlieghe (UZ Antwerpen)	**E-mail consultation 17/05/2022** **Meeting 20/05/2022**
Date of update	**Closing date**			

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Signal	The United Kingdom reported cases of monkeypox on three different occasions in the past weeks. On 7 May 2022, a case of monkeypox was confirmed in London in an individual who had travelled to Nigeria. On 14 May two additional confirmed cases, and one suspected case, all from the same household (parents and a two-week old baby), were reported, with no link to the first case and no travel history. On 15 May, four other cases were identified among men who have sex with other men (MSM) attending Sexual Health Services, three in London and one linked case in the north-east of England. These cases do not have any connections with the cases announced on May 14th, or on May 7th, and have no travel history. All cases were infection by the West African clade. On 12 May 2022, a post in EpiPulse by the OCP of microbiology of the STI network reported several (20) MSM presenting to an STI clinic in Lisbon, Portugal with symptoms compatible with monkeypox. Three of them have meanwhile been confirmed to be monkeypox. Following the alert, more cases have been reported in other countries, including Spain, Italy and Sweden.

Description	
Cause known?	*Monkeypox* is a sylvatic zoonosis with incidental human infections that usually occur sporadically in forested parts of Central and West Africa. It is caused by the monkeypox virus (MPXV) which belongs to the orthopoxvirus family (which also includes the Variola virus). There are two genetically distinct variants of MPXV: the Congo Basin (Central African) clade and the West African clade. Human-to-human transmission is limited, with the longest documented chain of transmission being six generations. It can be transmitted through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects. Possible transmission through aerosols cannot be excluded. The incubation period (time from infection to symptoms) for monkeypox (MPX) is usually 7−14 days but can range from 5−21 days. MPX is not considered contagious during its incubation period, but transmission 2 days (or more) before the start of the symptoms cannot be excluded and should be further studied. Previous household attack rates (i.e., rates of persons living with an infected person and developing symptoms of MPXV infection) of 3%–11% have been reported (50% in an outbreak in DRC).
Unexpected/unusual	Human monkeypox is rare outside Africa. It has been reported on several occasions, but limited to very few cases, with a link to travel or a travel-related case. It was reported for the first time in 2003 when a MPX outbreak occurred in the United States, linked to prairie dogs infected by rodents imported from Ghana. In September 2018, three individual patients were diagnosed in the United Kingdom; two had recently travelled to Nigeria, and the third case was a healthcare worker caring for one of the cases. Another imported case was identified in the UK in December 2019, and another in May 2021; this last case led to two further cases in family members. In October 2018, Israel also reported an imported MPX case from Nigeria and in May 2019, another case imported from Nigeria was reported by Singapore.

	Never before a case of MPX with no direct travel link to an endemic area was reported outside Africa and it is therefore highly unusual. Also transmission among the MSM community has never been reported before. UKHSA classified the event as 'unusual for the area, season or population'.
Severity	Human MPX often begins with a combination of fever, headache, chills, exhaustion, asthenia, lymph node swelling, back pain and muscle aches. Commonly, within one to three days after onset of fever, the patient develops a rash, which tends to first appear on the face and then spreads to other parts of the body, including hands and feet. The cutaneous lesions often first present as macules, evolving successively to papules, vesicles, pustules, crusts and scabs. The number of lesions may range from a few to thousands. Cutaneous lesions generally all appear at the same stage which is a hallmark characteristic of smallpox and MPX, and distinguishes them from chickenpox. However, based on clinical information for the cases in the UK and in Portugal, the clinical presentation seems atypical, with cutaneous lesions more predominant in the genital area (perianal), and not all at the same stage. More ulcerations have also been reported, possibly because of the place of the lesions. For most people, MPX is a self-limited disease, typically lasting two to four weeks and resulting in complete recovery, but in some cases, MPX can be more severe, requiring hospitalization. Illness severity is influenced by the route of infection. The West African clade appears to cause less severe disease compared to the Congo Basin clade. In Africa, the case-fatality rate of MPX ranges from 1% to 10%.
Dissemination Low	On the 19/5, a first confirmed case of MPX has been reported in Belgium, in a MSM, followed by two more cases on 20/19 and more suspected cases under investigation. The likelihood for further spread in Belgium outside the MSM community is estimated to be low because of the moderate transmissibility of the virus. However, infections among close contacts could occur.
Risk of (inter)national spread High	Since cases have been reported in at several countries (UK, EU countries and others), mostly among MSM, and in the context of the highly interconnected sexual networks among MSM, together with the start of the MSM events season with large number of participants (including the Belgian Pride the weekend of 21/05 in Brussels), it can be expected that there will be more cases reported in other countries.
Preparedness and response	
Preparedness	Laboratory capacity for the diagnosis of MPX is available both at the Institute of Tropical Medicine (ITM) and UZ Leuven/Rega institute. Samples (swabs for PCR testing) can be sent to one of the laboratories, after taking contact with a microbiologist of the lab[1]. For biosafety reasons (BSL3 level), the specimens need to be disinfected at the outside and sent under UN2814 label in a triple package (sample in secondary container and a tertiary container) by a courier with an ADR license. Vaccination of high-risk contacts (HRC) is possible with the smallpox vaccine or a recent specific vaccine against MXP. Both vaccines are available (or can be purchased) in Belgium. The Belgian Army has a stock of ACAM 2000®, that can be requested by the FOD/SPF Public Health. Or the vaccine Imvanex® (MVA-BN vaccine could be ordered by FOD/SPF. Contacts have been taken with the company,

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	and coordination at European level of the availability of the vaccine is ongoing (within HERA). Tecovirimat SIGA was recently approved by EMA for treatment of orthopoxviruses (including MPX), but it is not available in Belgium yet. Studies using a variety of animal species have shown that Tecovirimat is effective in treating orthopoxvirus-induced disease, but data on its effectiveness in treating human cases of monkeypox are not available. Human clinical trials indicated the drug was safe and tolerable with only minor side effects. Treatment with Tecovorimat could be considered for immunocompromised patients if available.
Specific control measures (surveillance, control, communication)	HIV reference centers in Belgium (n=12) have been contacted on May 17, with a request to report suspected cases. Seven centers reported not having had cases so far, and one center (ITM) reported 2 cases (see above).
Public health impact	
Public health impact in Belgium Low	This event is characterized by an unusually high frequency of human-to-human transmission of MPXV, without link to previously identified cases (indicating community transmission). Therefore more cases are expected to occur worldwide and in Belgium. The overall public health impact in Belgium can be considered low. The risk is estimated to be high for MSM, especially in case of multiple sexual partners and participation to events with a lot of people. Events like the upcoming Belgian Pride are particularly at risk for transmission. Non MSM having multiple partners are also at risk. Transmission outside the MSM community is expected to be very low but not excluded
Recommendations (surveillance, control, communication)	Case definition: this will be according to the ECDC proposal, expected by 23 May. Raise awareness and inform health care professionals that could see suspected cases: HIV reference centers for PrEP, STI clinics, GPs, emergency wards, infectiologists and dermatologists. Provide clear guidance on the management of suspected and confirmed cases (see actions). The following samples are recommended to be taken: - Swab of the vesicles (in a dry tybe), or crusts if in a later stage; - Swab of the throat. In case of a confirmed case, extensive contact tracing will be needed to identify the source of infection. In a first step, sexual and household partners of a case will be considered as High-Risk Contact, as well as health care professionals who took care of a case without personal protective equipment (PPE). HRC should self-monitor their symptoms and limit close contacts (including sexual relations) for a period of 21 days. Particular attention is needed for HRC in contact with young children, pregnant women and immunocompromised persons. In a follow-up meeting next week, a more detailed classification of contacts (and measures) will be discussed, taking into account ECDC recommendations (expected by 23/05). An advice of the High Health Council should be requested regarding the value of vaccination for HRC. Communication should be set up in two steps. An urgent communication is needed before the upcoming Belgian Pride, specifically to the organisers of the event and more broadly risk groups (through existing networks). While waiting for correct information of GPs, people with symptoms will be recommended to go to an emergency ward of a hospital. All emergency services should be informed on the hospitals with an infectiologist specialist on duty (list of Yellow Fever hospitals on

	Wanda.be, to be completed if relevant). GPs should receive basic information asap too. In a second step, more detailed guidelines should be developed for suspected cases. The involvement of GPs as first point of contact on the middle term should be investigated. The possibility to provide access for GPs to a teleconsult with an infectiologist should be explored, as well as the organisations of online webinars. The targeted groups at higher risk should also include e.g. sex workers and transgender.
Actions	• Urgently inform GPs and Emergency wards and hospitals in general on the procedure for the upcoming days → FOD/SPF (through HTSC) and regional authorities. • Urgently inform the organizers of the Belgian Pride, and more generally the MSM community as well as other risk groups (spread by Sensoa, Plateforme prevention sida, SidaSol, Alias, Espace P, Violett…) → Regional authorities with input for content by RAG. • Request organizers of past events with a high number of participants and likely high exposure to inform all participants. • Short communication to the general public. Especially MSM that engage in casual sex, or individuals engaging with multiple sexual partners or having casual sex, should be particularly vigilant → FOD/SPF with input for content by RAG. • In a second step, provide more detailed guidance on the management of (suspected) cases, to HIV reference centers for PrEP, STI clinics, GPs, emergency wards, infectiologists, and other clinicians who might be seeing suspected cases (dermatologists, urologists, gastro-enterologists, paediatricians…) → FOD/SPF with input from Sciensano/RAG (after follow-up meeting). - When and where to refer patients; - Testing: procedures for sampling and transport (with pictures), contact information of laboratories with testing capacity; - Treatment and other care (infection control measures); - Reporting of the cases to the regional public health authorities. • Create a specific webpage on the Scienanso website to gather information for health professionals → Sciensano • Request an advice of the High Health Council regarding vaccination of high-risk contacts → RMG

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