



Monkeypox

(Orthopoxvirus)

Communique #1

(Updated May 31st, 2022)

CONTENTS

Contents	2
Monkeypox Communique Introduction	3
What we know	3
Table 1 – Cases of Monkeypox in non-endemic countries reported to the WHO between 13-26 May 2022	4
Chart 1 – Geographical Distribution Monkeypox as of May 21st, 2022	5
Virus Pathology	5
Transmission	6
Signs and Symptoms	7
Risks	7
Rate of Spread (Non-Endemic Regions)	8
Prevention	8
Treatment	9
Key Points of Contact	Error! Bookmark not defined.
REFERENCES	10

MONKEYPOX COMMUNIQUE INTRODUCTION

Given the recent multi-country outbreak of monkeypox in non-endemic countries and emergence of the confirmed cases in United States and Canada, FULLER has initiated the first stage (prevention) of our pandemic preparedness measure. At this point all staff and clients should be cognizant of a preparation, not panic approach, to managing an initial outbreak response. In the first stage of FULLER's pandemic planning response there is no specific identified threat to business continuity but there is an increased focus on communication and awareness-based measures. This first communique will focus on the nature of the disease and developing proactive measures within our functions and capabilities. Success of any pandemic plan requires a cohesive global approach to effectively manage the threat of infection.

Information summarized in this communique was referenced from credible organizations and may serve useful as a method of information sharing to begin proactive counter measures should the disease enter our communities and neighborhoods.

WHAT WE KNOW

Since May 13th, 2022, cases of Monkeypox had been reported to the World Health Organization (WHO) from countries that are not endemic for monkeypox virus. As of the 21st of May 2022, there were 92 confirmed cases, and 28 suspected cases of monkeypox with investigations ongoing. On May 26th, 2022, the WHO updated case counts to include 257 confirmed cases and between 117-127 suspected cases. No associated deaths have been reported in non-endemic regions. Endemic countries for monkeypox, according to the WHO include Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Ghana (identified in animals only), Ivory Coast, Liberia, Nigeria, the Republic of the Congo, Sierra Leone, and South Sudan.

WHO reports that the situation is evolving and expects that there will be more cases of Monkeypox as surveillance expands in non-endemic countries. While it is known that monkeypox is a viral zoonosis (transmitted to humans from animals) the virus is highly transmissible from human-to-human (H2H) routes. WHO explains that available information suggests that H2H transmission is occurring among people in close physical

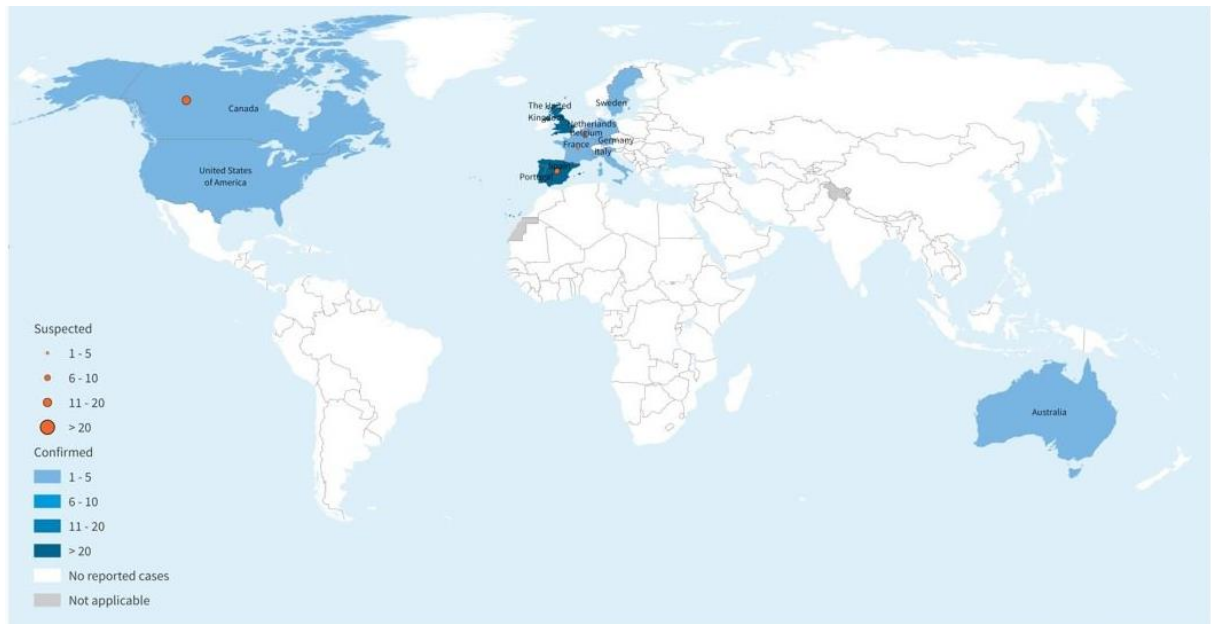
contact with cases who are symptomatic, and reported cases thus far have not established travel links to endemic areas (WHO, 2022).

The following table and geographical chart, obtained from the WHO, demonstrates the prevalence of the disease in non-endemic regions:

Table 1 – Cases of Monkeypox in non-endemic countries reported to the WHO between 13-26 May 2022

Region	Country	Confirmed	Suspected under investigation
PAHO	Argentina		1
	Canada	26	25 - 35
	French Guiana		2
	United States of America	10	
EMRO	United Arab Emirates	1	
	Sudan		1
EURO	Austria	1	
	Belgium	3	3
	Czechia	2	1
	Denmark	2	
	Finland	1	
	France	7	
	Germany	5	
	Israel	1	
	Italy	4	
	Netherlands	12	>20
	Portugal	49	
	Slovenia	2	
	Spain	20	64
	Sweden	2	
Switzerland	1		
	United Kingdom of Great Britain and Northern Ireland	106	
WPRO	Australia	2	
TOTAL	23 countries	257	117-127

Chart 1 – Geographical Distribution Monkeypox as of May 21st, 2022



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

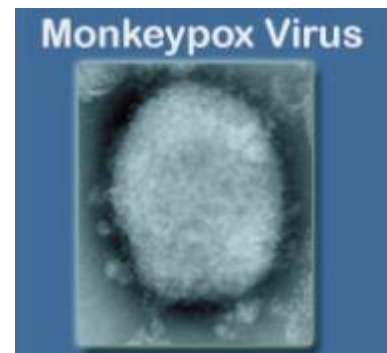
Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme
Map Date: 21 May 2022



VIRUS PATHOLOGY

Monkeypox virus is an enveloped double-stranded DNA virus that belongs to the *Orthopoxvirus* genus of the *Poxviridae* family (WHO, 2022)

Monkeypox disease is caused by infection with monkeypox virus. Monkeypox virus (MPXV) belongs to the *Orthopoxvirus* genus in the family *Poxviridae*. *Orthopoxvirus* genus also includes variola virus, which causes smallpox, vaccinia virus (VACV), which is used in the smallpox vaccine, Camelpox virus (CMLV), cowpox virus (CPXV) and several others (Shchelkunov S., 2013)



Orthopoxviruses are immunologically cross-reactive and cross-protective, so that infection with any member of this genus provides protection against infection with any other member of the genus (Shchelkunov S., 2013). WHO describes that vaccines used during the smallpox eradication programs also provided protection against monkeypox (WHO, 2022)

Other relevant information from the Public Health Agency of Canada (PHAC):

- **Susceptibility to disinfectants:** Orthopoxviruses are susceptible to 0.5% sodium hypochlorite, chloroxyleneol-based household disinfectants, glutaraldehyde, formaldehyde, and paraformaldehyde
- **Physical Inactivation:** Orthopoxviruses are inactivated by heat (autoclaving and incineration)
- **Survival Outside Host:** Orthopoxviruses are stable at ambient temperatures when dried.

Consider local and state requirements when selecting chemical products:

- **Health Canada:** Products claiming efficacy against viruses must be supported as a virucide (efficacy against specific viruses) or a broad spectrum virucide (efficacy against representative hard to kill non-enveloped virus and is expected to inactivate other non-enveloped and enveloped viruses) (Health Canada, 2014)
- **US EPA:** see Appendix for products registered under list Q for that can inactivate Tier 1 (enveloped virus) or better. (US EPA, 2022)

FULLER has resources to assist clients with the selection of the proper chemical products, please reach out for assistance where required.

TRANSMISSION

Transmission of the virus occurs when a person comes in contact with the virus from an animal, human or material contaminated with the virus (CDC, 2021). The virus enters the body through broken skin (even if not visible), respiratory tract, or mucous membranes (eye, nose, or mouth). Animal to human contact is likely to be localized to endemic area but may occur by bite or scratch, bush meat preparation, direct contact with body fluids or lesion material or indirect contact with lesion material such as through contaminated bedding (CDC, 2021). H2H transmission is thought to occur primarily through large respiratory droplets or direct contact with body fluids or lesion material, or indirect contact with lesion material, such as through contaminated clothing or linens (CDC, 2021).

Monkeypox can also be transferred from human-to-human via the respiratory tract, by direct contact with body fluids of an infected person, or with virus-contaminated objects (PHAC, 2011)

SIGNS AND SYMPTOMS

The incubation period (time from infection to onset of symptoms) of monkeypox is usually 6-13 days but can range from 5-21 days.

The infection can be divided into two periods:

- the invasion period (lasts between 0–5 days) characterized by fever, intense headache, lymphadenopathy (swelling of the lymph nodes), back pain, myalgia (muscle aches) and intense asthenia (lack of energy). Lymphadenopathy is a distinctive feature of monkeypox compared to other diseases that may initially appear similar (chickenpox, measles, smallpox)
- the skin eruption usually begins within 1–3 days of appearance of fever. The rash tends to be more concentrated on the face and extremities rather than on the trunk. It affects the face (in 95% of cases), and palms of the hands and soles of the feet (in 75% of cases). Also affected are oral mucous membranes (in 70% of cases), genitalia (30%), and conjunctivae (20%), as well as the cornea. The rash evolves sequentially from macules (lesions with a flat base) to papules (slightly raised firm lesions), vesicles (lesions filled with clear fluid), pustules (lesions filled with yellowish fluid), and crusts which dry up and fall off. The number of lesions varies from a few to several thousand. In severe cases, lesions can coalesce until large sections of skin slough off.



Monkeypox is usually a self-limited disease with the symptoms lasting from 2 to 4 weeks. Severe cases occur more commonly among children and are related to the extent of virus exposure, patient health status and nature of complications. Underlying immune deficiencies may lead to worse outcomes. Although vaccination against smallpox was protective in the past, today persons younger than 40 to 50 years of age (depending on the country) may be more susceptible to monkeypox due to cessation of smallpox vaccination campaigns globally after eradication of the disease. Complications of monkeypox can include secondary infections, bronchopneumonia, sepsis, encephalitis, and infection of the cornea with ensuing loss of vision. The extent to which asymptomatic infection may occur is unknown.

Source: <https://www.who.int/news-room/fact-sheets/detail/monkeypox>

RISKS

The most probable route of entry of this virus into the North American geographic region will be from international travel and FULLER expects that probable modes of transmission

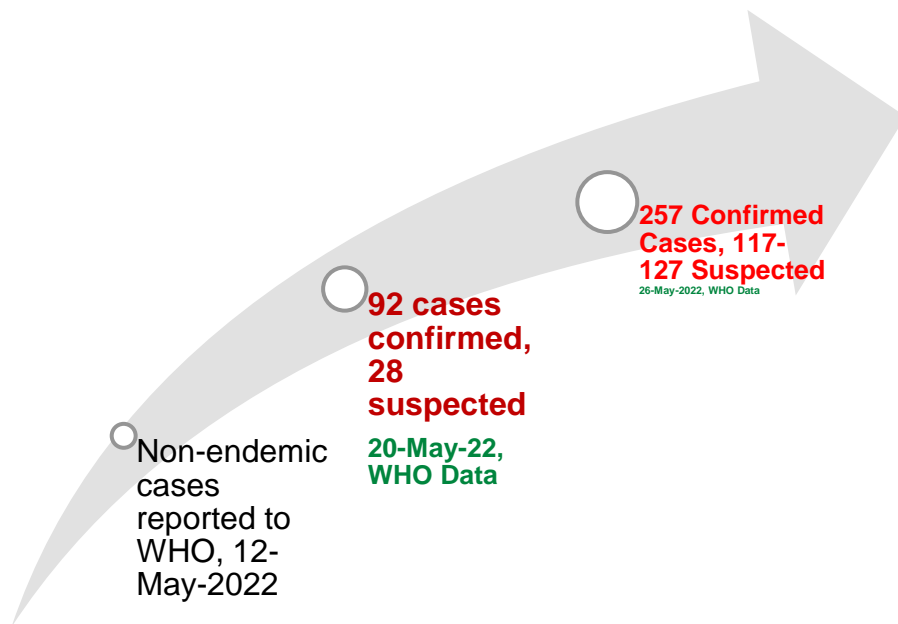
within North America will be from Human-to-Human contact, commonly displayed as "H2H". This risk statement may change and will be updated as more information is understood about the illness by experts.

Risk mitigation steps currently include:

- Surveillance and rapid identification of new cases. This is critical for outbreak containment.
- During human monkeypox outbreaks, close contact with infected persons is the most significant risk factor for monkeypox virus infection

RATE OF SPREAD (NON-ENDEMIC REGIONS)

The rate of spread continues to be monitored. There is little localized presence in non-endemic regions.



PREVENTION

There are number of measures that can be taken to prevent infection with monkeypox virus:

- Avoid contact with animals that could harbor the virus (including animals that are sick or that have been found dead in areas where monkeypox occurs).
- Avoid contact with any materials, such as bedding, that has been in contact with a sick animal.
- Isolate infected patients from others who could be at risk for infection.
- Practice good hand hygiene after contact with infected animals or humans. For example, washing your hands with soap and water or using an alcohol-based hand sanitizer.
- Use personal protective equipment (PPE) when caring for patients.

TREATMENT

There are known therapeutic drugs available for the treatment of monkeypox. Consult a physician for available treatment options in North America.

APPENDIX: FULLER PRODUCTS ON USEPA LIST Q: DISINFECTANTS FOR EMERGING VIRAL PATHOGENS

EPA no.	Active Ingredient(s)	Product Name	Contact time	Formulation Type	Surface Type	Fuller/Franklin Name
6836-70	Quaternary ammonium	BARDAC 205M-7.5	10	Dilutable; Electrostatic spray	Hard Nonporous (HN)	AQ+ Ultra
47371-130	Quaternary ammonium	Formulation HWS-128	10	Dilutable	Hard Nonporous (HN)	Q-128 One Step Germicidal Detergent and Deodorant or T.E.T.#7 Neutral Disinfectant Cleaner
1839-83	Quaternary ammonium	Detergent Disinfectant Pump Spray	10	Ready-to-use	Hard Nonporous (HN)	Dutch Plus

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