

**ZOONOTIC AND VECTOR-BORNE DISEASES****Monkeypox- multi-national outbreak**

From 13 May 2022 to 31 May 2022, monkeypox has been confirmed in 23 non-endemic countries. At 26 May 2022, a total of 257 cases has been laboratory confirmed and a further 120 suspected cases were reported to the World Health Organization. The outbreak is unprecedented as it presents the first outbreak of monkeypox involving several non-endemic countries simultaneously. It is also already the largest outbreak of monkeypox outside of endemic states to date. The epidemiological links of cases are still under investigation but most of the cases reported to date have been found in men that have sex with men (MSM). There are also evidence suggesting the involvement of large social gatherings that may have served as super-spreader events. Genetic analysis of the viral genomes associated with some of the cases indicate the circulation of the Western African clade of monkeypox virus with the viruses most closely related to those reported in Nigeria since 2018. The hypothesis is that the outbreak is caused by a single source introduction, likely a traveller to an endemic area such as Nigeria, with community spread affecting primarily the MSM community.

Monkeypox is caused by infection with monkeypox virus, a virus endemic to the deep-forested regions of a number of Western and Central African countries (including Democratic Republic of Congo, Nigeria, Central African Republic, Cameroon, Ghana, Sierra Leone, Liberia, South Sudan and Ivory Coast). This is a zoonotic disease with the natural host to be confirmed. The first human cases of monkeypox was reported in the 1970s and it has remained a relatively rare disease of humans since. Cases of monkeypox are reported intermittently from the endemic countries although a systematic increase of cases have been noted in recent years. In the first five months of 2022, the Democratic Republic of Congo reported more than 1 200 cases of monkeypox whilst Nigeria reported nearly 50 cases. Cases of monkeypox outside of endemic areas have included the 2003 outbreak of monkeypox in the US which was linked to the exotic pet trade. Since 2018, six cases of monkeypox in travellers have been noted respectively in Israel, the United Kingdom, Singapore and the US. A secondary case of transmission was noted only in one of these cases and involved a health care worker. No fatalities were recorded in these cases.

Monkeypox is typically a mild self-limiting disease. The incubation period following exposure ranges from 5-21 days. Initial signs and symptoms include fever, intense headache, back pain, malaise and intense weakness. Lymphadenopathy

is noted. The rash develops 1-3 days following onset of febrile illness. The rash involves blister-like skin lesions which are often found on the face and extremities (including the soles of the feet and palms of the hands). The lesions may also found on mouth, genitalia and eyes. Corneal lesions are less commonly reported. The lesions evolve from macules to papules to vesicles to pustules. The pustules will crust over and scabs will then fall off. Scarring may be noted in some cases. The number of lesions varies from very few to widely spread across the body. Most cases will resolve in 3-4 weeks. Severe cases in endemic countries have been mostly reported in children. It is also anticipated that immunocompromised individuals may be predisposed to more severe disease. Cases are diagnosed based on the presence of the rash and confirmed by specific laboratory investigations. The NICD provides referral diagnostic service for investigation of monkeypox cases in South Africa and guidance on the submission of samples for investigation is available from the NICD website. Differential diagnosis includes other causes of rash illness including chickenpox, measles, bacterial skin infections, syphilis and non-infectious aetiologies such as medication associated allergies.

Although there are a number of suggested anti-viral therapies for monkeypox, most cases will not require such intervention and management is supportive. Currently there are no specific monkeypox vaccines commercially available. Vaccines previously used for smallpox immunization provides up to 85% cross-protective immunity to monkeypox. Smallpox vaccination was discontinued in most countries in the 1980s due to the successful eradication of smallpox. Some level of immunity is therefore expected in the population aged 40-50 years (depending when smallpox vaccination ceased in the country) and onwards. Stocks of smallpox vaccines are available in international stockpiles and it may be that large scale production may be started up again.

Current recommendations for outbreak response includes increased surveillance for possible cases, case investigation with laboratory confirmation followed by case tracing and monitoring. Isolation of confirmed cases are recommended and the requirement of in-hospital isolation may be considered on a case by case basis. For more information on the outbreak responses to confirmed monkeypox cases visit the NICD website.

For more information on monkeypox and current developments, visit the NICD website.