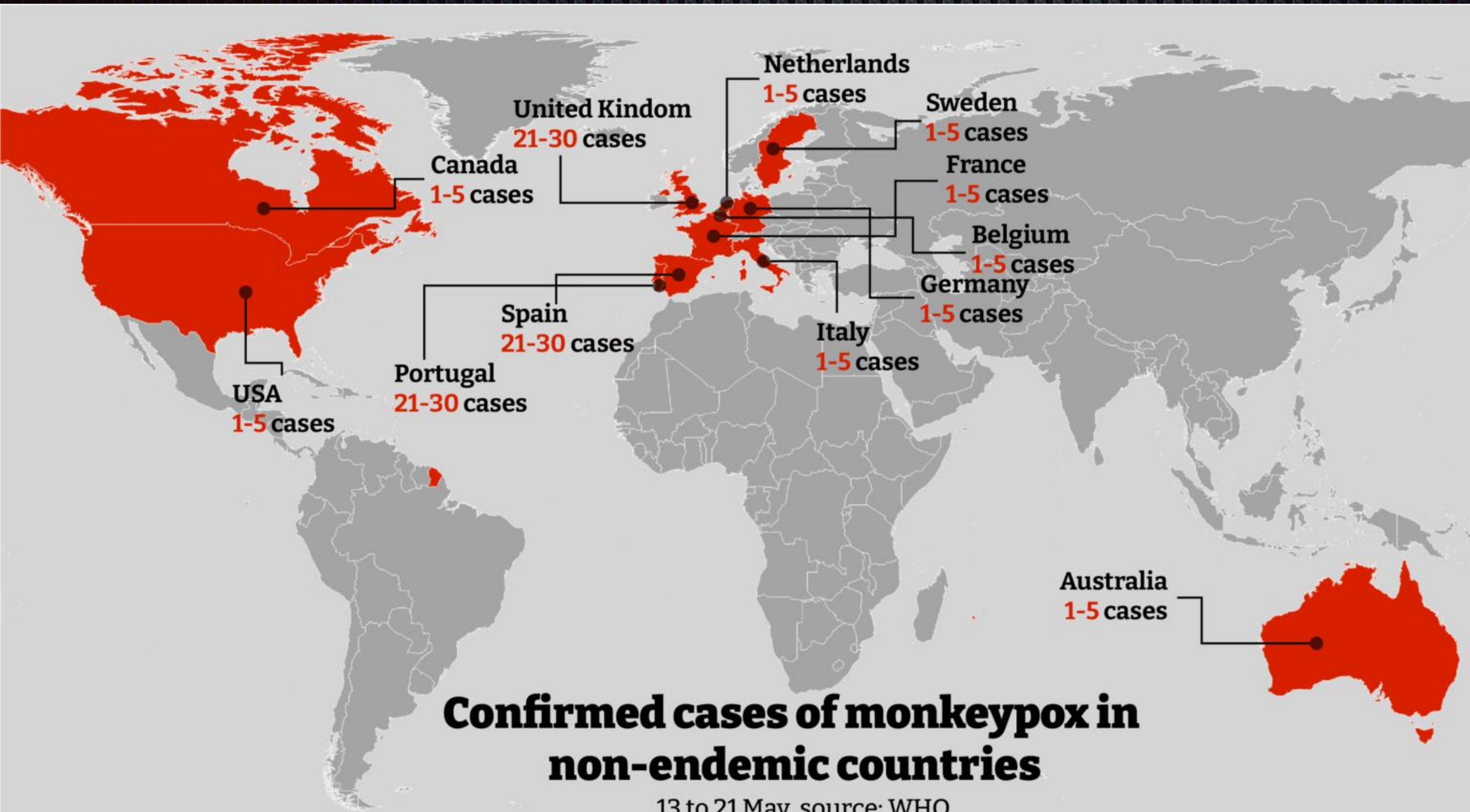


# Monkeypox

**Tony Korman**

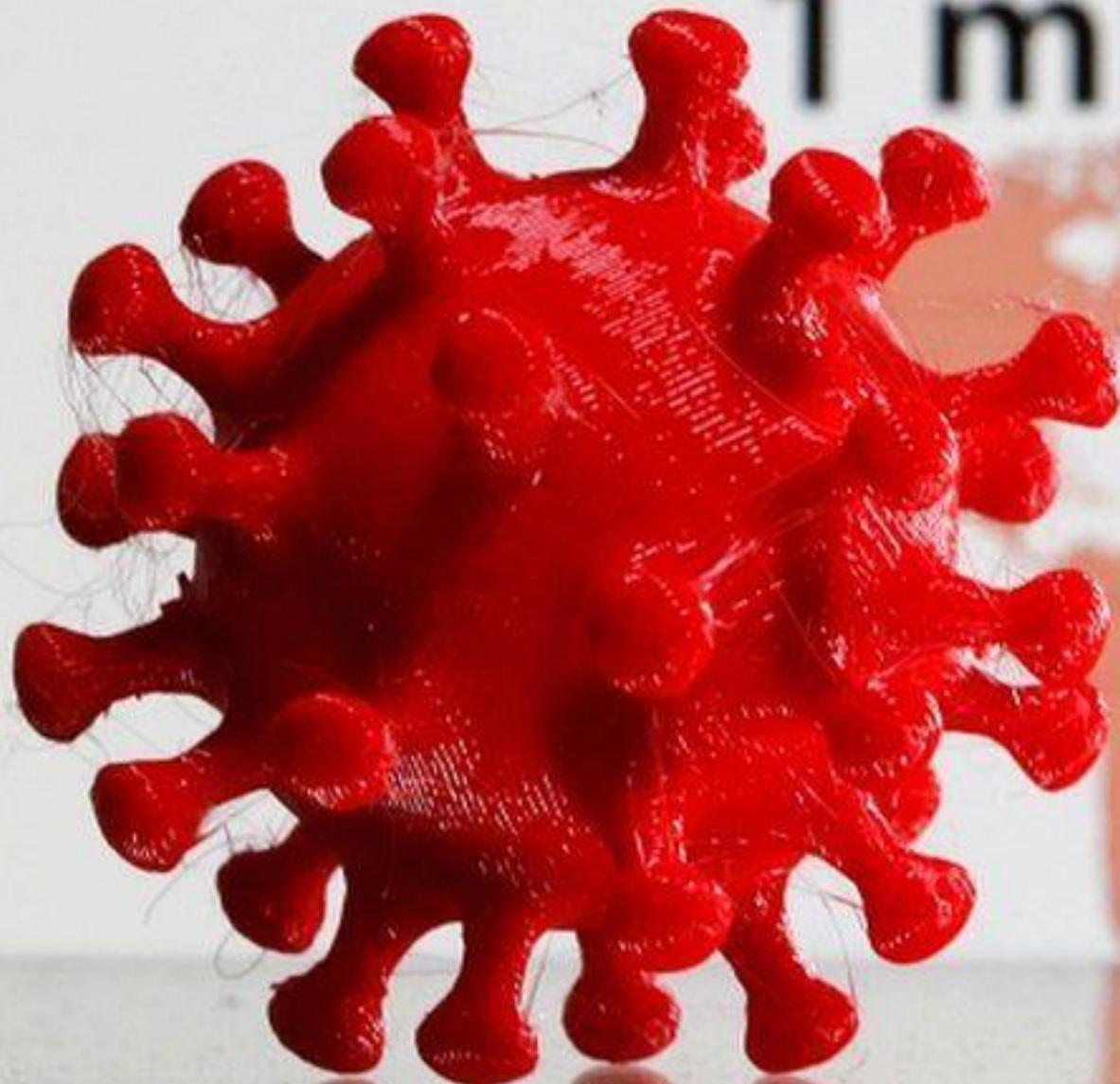






Coronavirus COVID-19

1 million deaths





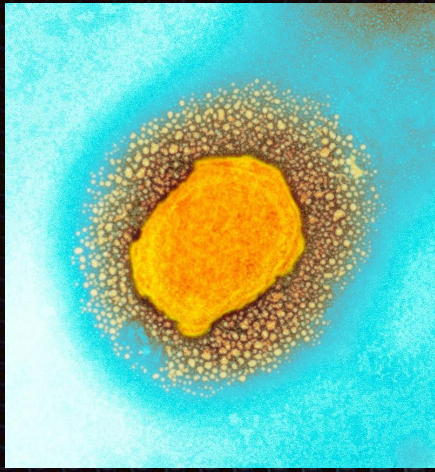




# Monkeypox

- Monkeypox virus
- History
- Transmission
- Clinical Features
- Diagnosis
- Treatment & Prevention

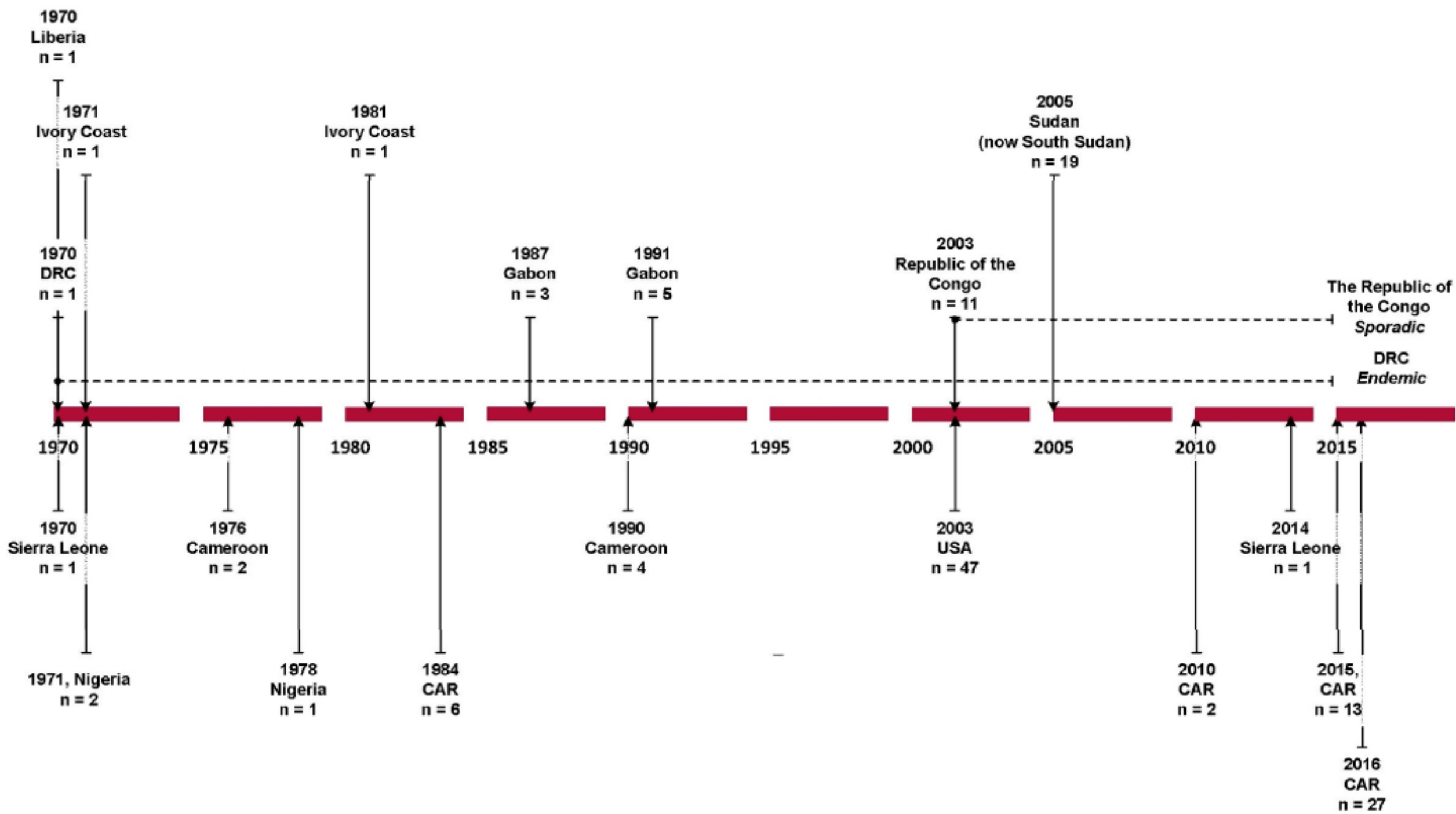




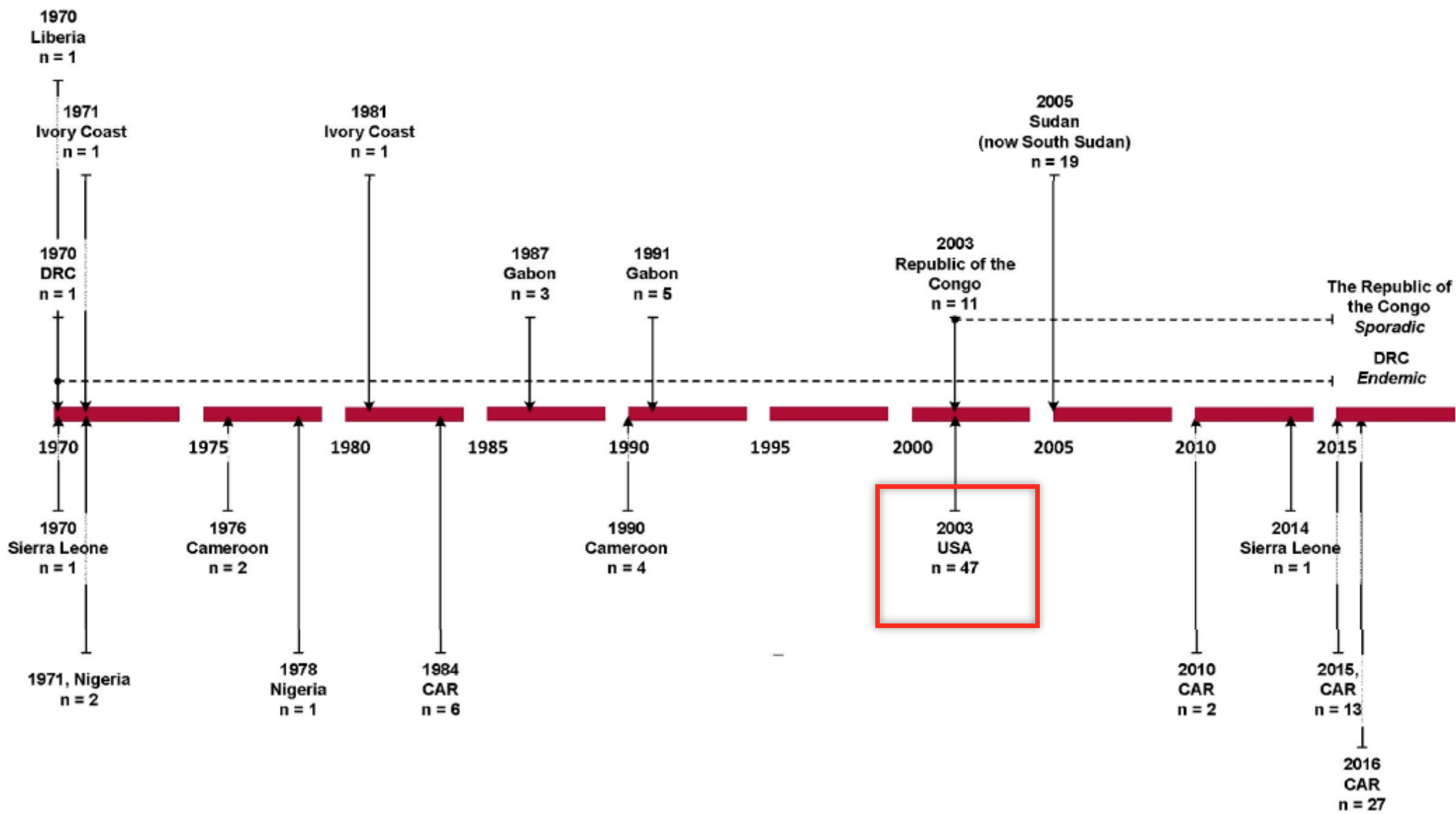
# Monkeypox virus

- Evolutionary enveloped double-stranded DNA virus
- Orthopoxvirus genus, Poxviridae family
  - cowpox, vaccinia (smallpox vaccine), variola (smallpox)
- 2 distinct genetic clades of the monkeypox virus
  - Central African (Congo Basin) more severe, ? transmissible
  - West African
- ?natural host - squirrels, rats, non-human primates















### Monkeypox: Suspected trail of infection



- Monkeypox is related to smallpox
- Symptoms include rash, fever, chills, sores
- Not usually fatal
- Symptoms last 2-4 weeks



**GIANT GAMBIAN RAT**  
Disease carried into US by rats imported from Africa as exotic pets



**PRAIRIE DOG**  
Disease spreads to prairie dogs captured in Texas for use as pets



**HUMANS**  
Contract disease when scratched or bitten by infected prairie dogs





# Outbreak of human monkeypox in Nigeria in 2017–18: a clinical and epidemiological report

*Adesola Yinka-Ogunleye, Olusola Aruna, Mahmood Dalhat, Dimie Ogoina, Andrea McCollum, Yahyah Disu, Ibrahim Mamadu, Afolabi Akinpelu, Adama Ahmad, Joel Burga, Adolphe Ndoreraho, Edouard Nkunzimana, Lamin Manneh, Amina Mohammed, Olawunmi Adeoye, Daniel Tom-Aba, Bernard Silenou, Oladipupo Ipadeola, Muhammad Saleh, Ayodele Adeyemo, Ifeoma Nwadiutor, Neni Aworabhi, Patience Uke, Doris John, Paul Wakama, Mary Reynolds, Matthew R Mauldin, Jeffrey Doty, Kimberly Wilkins, Joy Musa, Asheena Khalakdina, Adebayo Adedeji, Nwando Mba, Olubunmi Ojo, Gerard Krause\*, Chikwe Ihekweazu\*, for the CDC Monkeypox Outbreak Team†*

## Summary

*Lancet Infect Dis* 2019;  
19: 872–79

**Background** In September, 2017, human monkeypox re-emerged in Nigeria, 39 years after the last reported case. We aimed to describe the clinical and epidemiological features of the 2017–18 human monkeypox outbreak in Nigeria.

*DOI: 10.1016/S1473-3099(19)30100-0*



# Two cases of monkeypox imported to the United Kingdom, September 2018

Aisling Vaughan<sup>1,15</sup>, Emma Aarons<sup>2</sup>, John Astbury<sup>3</sup>, Sooria Balasegaram<sup>3</sup>, Mike Beadsworth<sup>4,5</sup>, Charles R Beck<sup>3,14</sup>, Meera Chand<sup>6,7,8</sup>, Catherine O'Connor<sup>1</sup>, Jake Dunning<sup>6,9</sup>, Sam Ghebrehewet<sup>3</sup>, Nick Harper<sup>10</sup>, Ruth Howlett-Shipley<sup>11</sup>, Chikwe Ihekweazu<sup>12</sup>, Michael Jacobs<sup>9</sup>, Lukeki Kaindama<sup>13</sup>, Parisha Katwa<sup>13</sup>, Saye Khoo<sup>4,5</sup>, Lucy Lamb<sup>9,11</sup>, Sharon Mawdsley<sup>10</sup>, Dilys Morgan<sup>1</sup>, Ruth Palmer<sup>10</sup>, Nick Phin<sup>6</sup>, Katherine Russell<sup>1</sup>, Bengü Said<sup>1</sup>, Andrew Simpson<sup>2</sup>, Roberto Vivancos<sup>3,15,16</sup>, Michael Wade<sup>3</sup>, Amanda Walsh<sup>1</sup>, Jennifer Wilburn<sup>1</sup>

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# Family cluster of three cases of monkeypox imported from Nigeria to the United Kingdom, May 2021

**Gemma Hobson<sup>1</sup> , James Adamson<sup>1</sup> , Hugh Adler<sup>2,3</sup> , Richard Firth<sup>1</sup> , Susan Gould<sup>2,3</sup> , Catherine Houlihan<sup>4,5</sup> , Christopher Johnson<sup>1</sup> , David Porter<sup>6</sup> , Tommy Rampling<sup>4,7</sup> , Libuse Ratcliffe<sup>2</sup> , Katherine Russell<sup>8</sup> , Ananda Giri Shankar<sup>1</sup> , Tom Wingfield<sup>2,3,9</sup>**

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Hobson Gemma, Adamson James, Adler Hugh, Firth Richard, Gould Susan, Houlihan Catherine, Johnson Christopher, Porter David, Rampling Tommy, Ratcliffe Libuse, Russell Katherine, Shankar Ananda Giri, Wingfield Tom. Family cluster of three cases of monkeypox imported from Nigeria to the United Kingdom, May 2021. *Euro Surveill.* 2021;26(32):pii=2100745. <https://doi.org/10.2807/1560-7917.ES.2021.26.32.2100745>

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## Monkeypox in a Traveler Returning from Nigeria — Dallas, Texas, July 2021

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# Transmission

- Animal-to-human (zoonotic)
- Human-to-human
  - **Close contact**
    - respiratory droplets
      - usually requires prolonged face-to-face contact
    - skin lesions of an infected person
    - indirect contact with lesions eg contaminated clothing



# Clinical Features

- Incubation period **7-14 days** (5-21 days)
- Day 1-3: Fever, headache, myalgias, lymphadenopathy
- **Rash**
  - Macules -> Papules -> Vesicles -> Pustules -> Scabs
- Symptoms last 2-4 weeks





# Treatment & Prevention

- No proven treatment
- Antivirals: cidofovir, brincidofovir, ST-246 (tecovirimat)
- Smallpox vaccine
- Vaccinia immunoglobulin



# **(Interim) Monkeypox reference document**

## **Procedure**

### **TABLE OF CONTENTS**

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#### Background

- [Infectious period](#)
- [Transmission](#)
- [Clinical presentation](#)
- [Treatment](#)

#### Precautions and contraindications

#### Standard requirements

#### Equipment

#### Procedure

- [Diagnosis and specimen collection](#)
- [Patient management](#)
- [Exposure follow up](#)

#### [Contact tracing](#)

#### [Post exposure prophylaxis](#)

#### [Appendix 1: How to take a deep nasal and oropharyngeal swab](#)

#### [Appendix 2: Staff and visitor room entry log](#)



# Suspected Monkeypox

- Consider diagnosis
- Isolate: Contact PLUS Airborne precautions
  - N95, eye protection, gown & glove
- Notify Infectious Diseases
  - liaise with IP, DoH, VIDRL etc
- Specimen collection: swab, oral/nasal swab









**KEEP  
CALM  
AND  
CARRY  
ON**