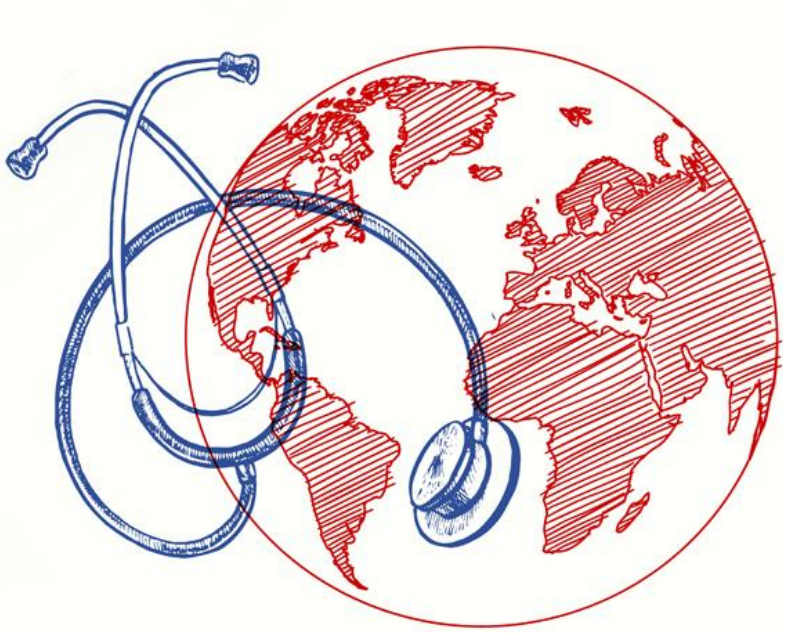
Global Health Cast 75

August 22, 2024



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What we talk about today

- **Shingles may pose a 20% higher risk for long-term confusion, memory loss**
- **Africa CDC declares public health emergency for mpox**
- **WHO declares global public health emergency for mpox in Africa**
- **Mpox – the basics to know**

Shingles may pose a 20% higher risk for long-term confusion, memory loss

Herpes zoster and long-term risk of subjective cognitive decline

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Abstract

Background Herpes zoster (HZ), commonly known as "shingles," may contribute to cognitive decline through mechanisms such as neuroinflammation or direct neuronal injury. However, evidence on the longitudinal association between HZ and cognitive decline is conflicting and whether the risk differs by APOE ε4-carrier status has not been studied; prospective cohort studies on the association between HZ vaccination and cognitive decline are also lacking.

Methods We included 149,327 participants from three large cohorts—the Nurses' Health Study (NHS), NHSII, and Health Professionals Follow-Up Study (HPFS)—to prospectively examine the association between HZ and subsequent subjective cognitive decline (SCD). Poisson regression was used to estimate the multivariable-adjusted relative risk (MVRR) of a 3-unit increment in SCD score according to years since HZ compared with participants with no history of HZ.

Results Compared with individuals with no history of HZ, the MVRR (95% CI) of a 3-unit increment in SCD score was significantly and independently higher among individuals with a history of HZ, but the duration of time since HZ when the elevated risk of SCD was statistically significant differed among the cohorts. In NHS, HZ was associated with higher long-term risk of SCD; compared with individuals with no history of HZ, the MVRR (95% CI) of a 3-unit increment in SCD score was 1.14 (1.01, 1.32) for ≥ 13 years since HZ. In NHS II, HZ was associated with higher risk of SCD in both the short-term [MVRR 1.34 (1.18, 1.53) for 1–4 years] and long-term [MVRR 1.20 (1.08, 1.34) for ≥ 13 years since HZ]. In HPFS, an elevated risk of SCD was suggested across all time points. Among the subset of participants with information on APOE ε4, there was a suggestion that the association differed by APOE ε4 carrier status, but the results were not consistent between women and men. Among the subset of women with information on HZ vaccination, there was a suggestion that the long-term risk of SCD may be greater among women who were not vaccinated against HZ.

Conclusions Data from three large independent cohorts of women and men showed that HZ was associated with higher long-term risk of SCD, and the risk may differ by APOE ε4-carrier status.

Keywords Herpes zoster, Shingles, Subjective cognitive decline, Vaccination, Immunocompromise, APOE ε4, Prospective cohort study

- Herpes zoster (HZ), commonly known as "shingles," may contribute to cognitive decline through mechanisms such as neuroinflammation or direct neuronal injury.
- Evidence on the longitudinal association between HZ and cognitive decline is conflicting.

What this study adds?

Data from 3 large independent cohorts of women and men showed that HZ was associated with higher long-term risk of subjective cognitive decline (SCD).

Africa CDC declares public health emergency for mpox

Salim Abdool Karim, MBChB, PhD
South African virologist, epidemiologist
Chair, Africa CDC mpox expert group

- Surveillance data are limited, leaving experts with only a partial picture of what's happening on the ground.
- High burden of illness, cases already triple the number recorded when the WHO declared a public health emergency of international concern for mpox in 2022.
- Case numbers have been accelerating over the past few weeks, and the upward trend is quite concerning, he said. The case-fatality rate—in the 3% to 4% range—is higher than expected and is considered too high, with fatalities concentrated in people with HIV.

WHO declares global public health emergency for mpox in Africa

WHO Director-General declares mpox outbreak a public health emergency of international concern

WHO DG Dr Tedros: "The emergence of a new clade of mpox, its rapid spread in eastern DRC, and the reporting of cases in several neighbouring countries are very worrying. On top of outbreaks of other mpox clades in DRC and other countries in Africa, it's clear that a coordinated international response is needed to stop these outbreaks and save lives."

WHO Regional Director for Africa Dr Matshidiso Moeti: "Significant efforts are already underway in close collaboration with communities and governments, with our country teams working on the frontlines to help reinforce measures to curb mpox."

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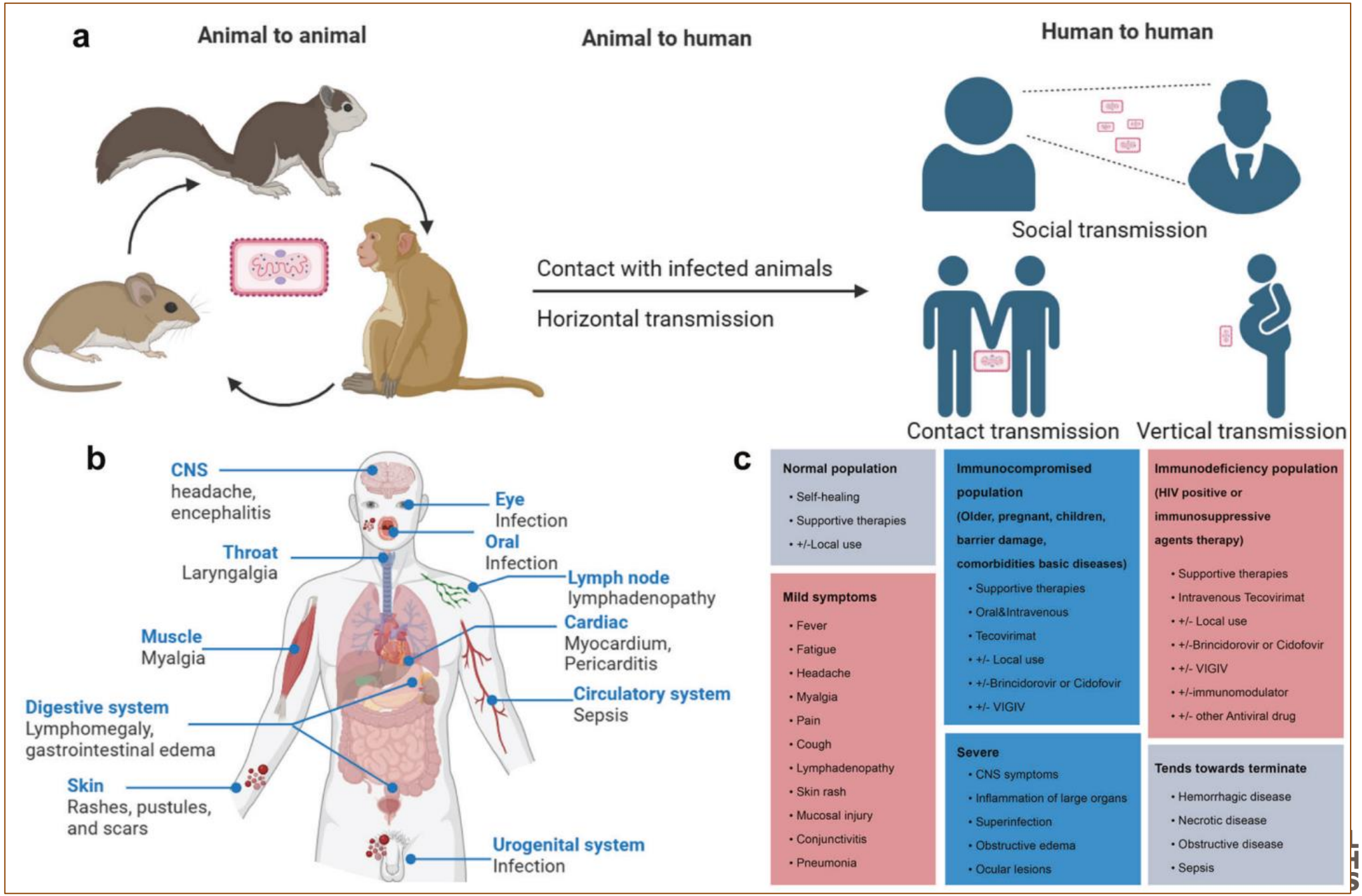
https://www.who.int/news/item/14-08-2024-who-director-general-declares-mpox-outbreak-a-public-health-emergency-of-international-concern

Orthopoxviruses (genus) causing human diseases

Species	Host	Disease
Variola	Humans	Smallpox
Coxpox	Cows, rodents	Localized skin ulceration
Vaccinia[a]	Cows	Local vesicles
Mpox	Unknown, probably rodents	Generalized infection; (rare in humans to date)

Mpox
Clinical Summary



Mpox: Transmission

- **Animal to human transmission** of mpox occurs from infected animals to humans from bites or scratches, or during activities such as hunting, skinning, trapping, cooking, playing with carcasses, or eating animals.
- **Person-to-person transmission**: direct contact with infectious skin / other lesions, i.e.
  - skin-to-skin (touching or vaginal/anal sex)
  - mouth-to-mouth (kissing)
  - mouth-to-skin contact (oral sex or kissing the skin)
  - face-to-face (talking or breathing)
  - respiratory droplets or short-range aerosols from prolonged close contact
- Mpox enters body through **broken skin, mucosal surfaces** (e g oral, pharyngeal, ocular, genital, anorectal), or via the **respiratory tract**.
- People can contract mpox from **contaminated objects** such as clothing or linens, through sharps injuries in health care, or in community setting such as tattoo parlours.

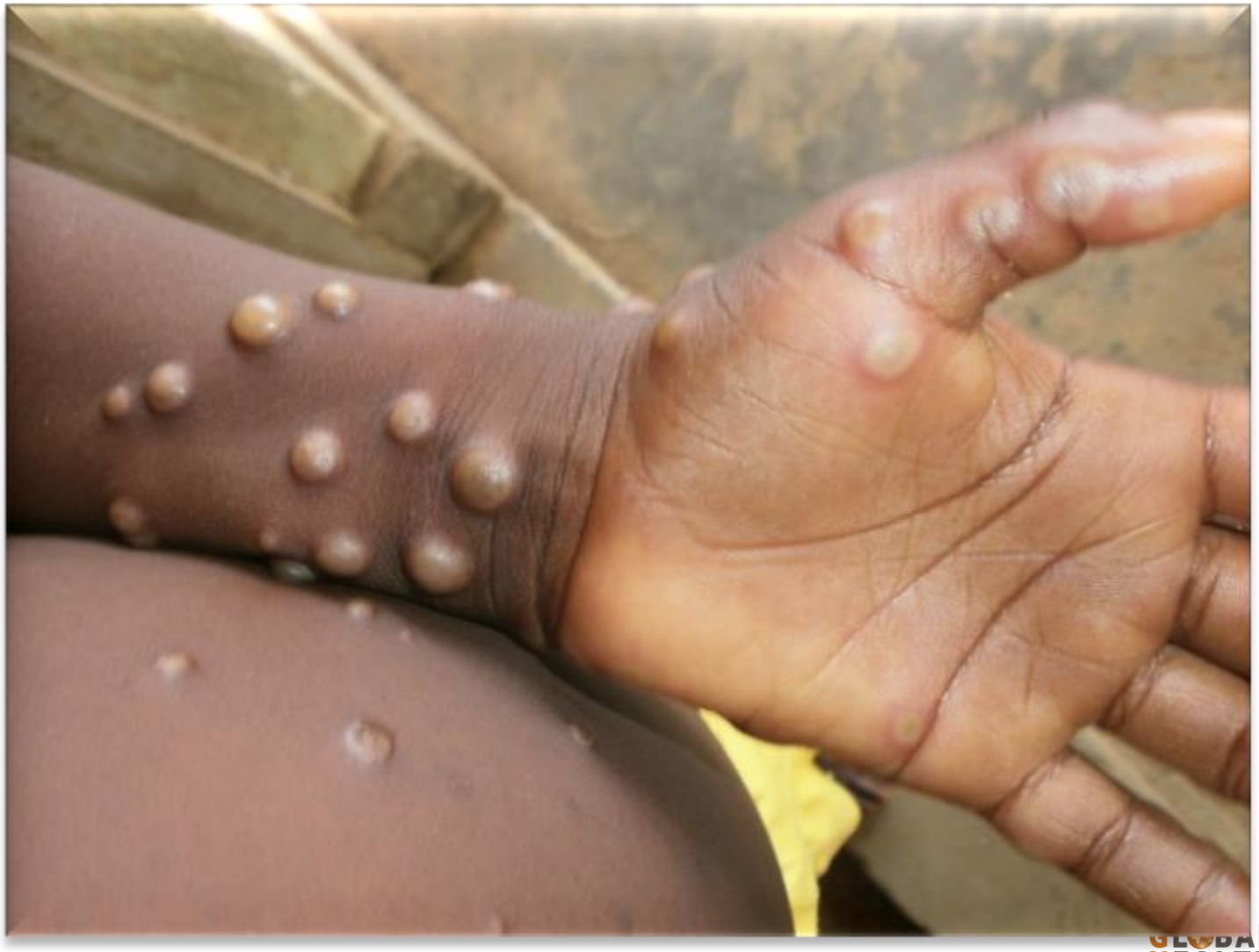
Mpox – new developments: Clades

Clade 1a
- Endemic in **DRC / central and East Africa**
- affects mostly children, various modes of spreading

Clade 1b (09/2023)
- current outbreak in /around **DRC**
- affects mostly adults
- spreading predominantly by intimal contact (sexual networks), less other by routes.

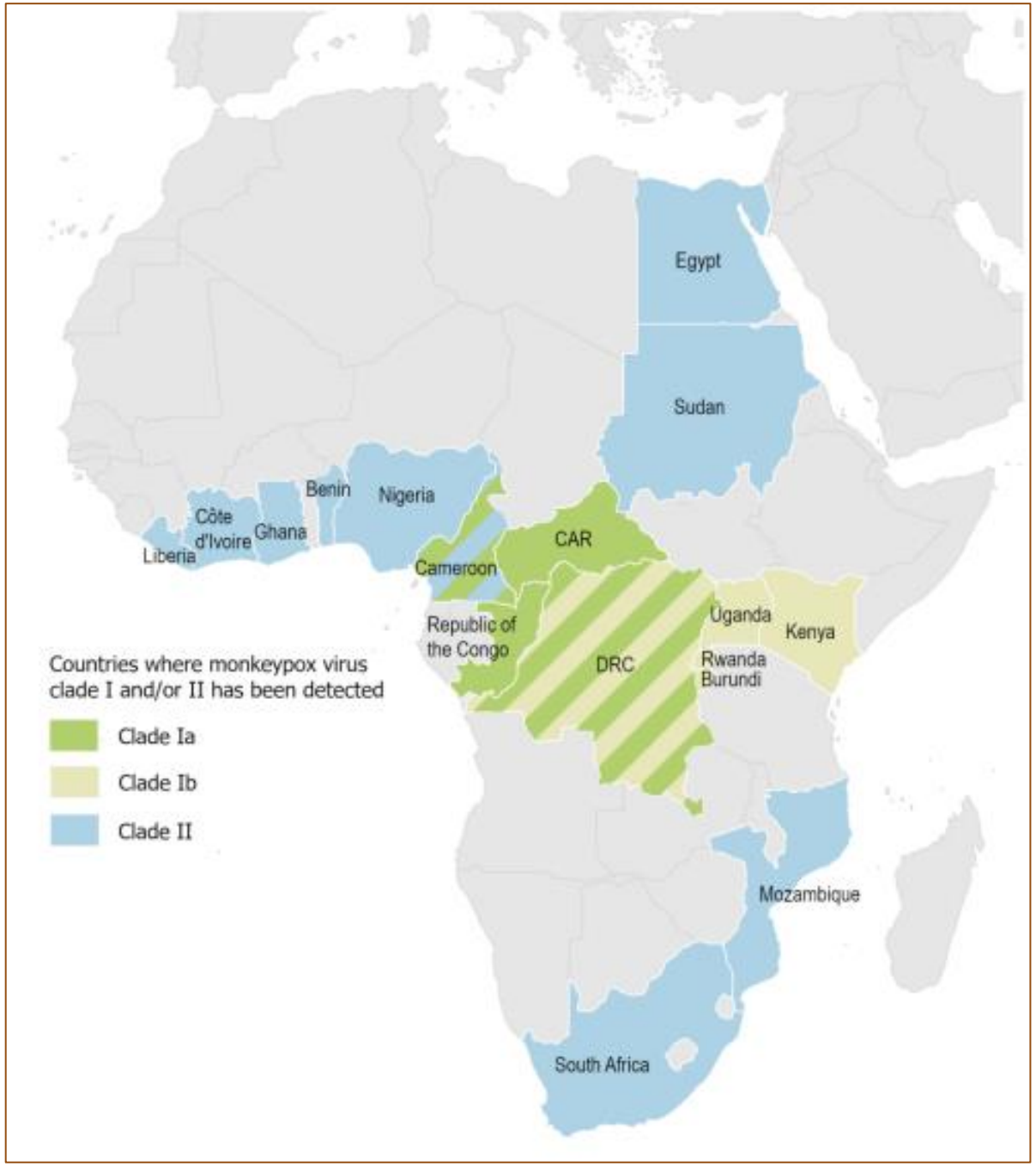
Clade 2a
- endemic in West Africa for decades
- low incidence,
- Various transmission routes like clade 1a.

Clade 2b
- originated in 2022/2023 global outbreak
- >96% men, primarily sexual contact



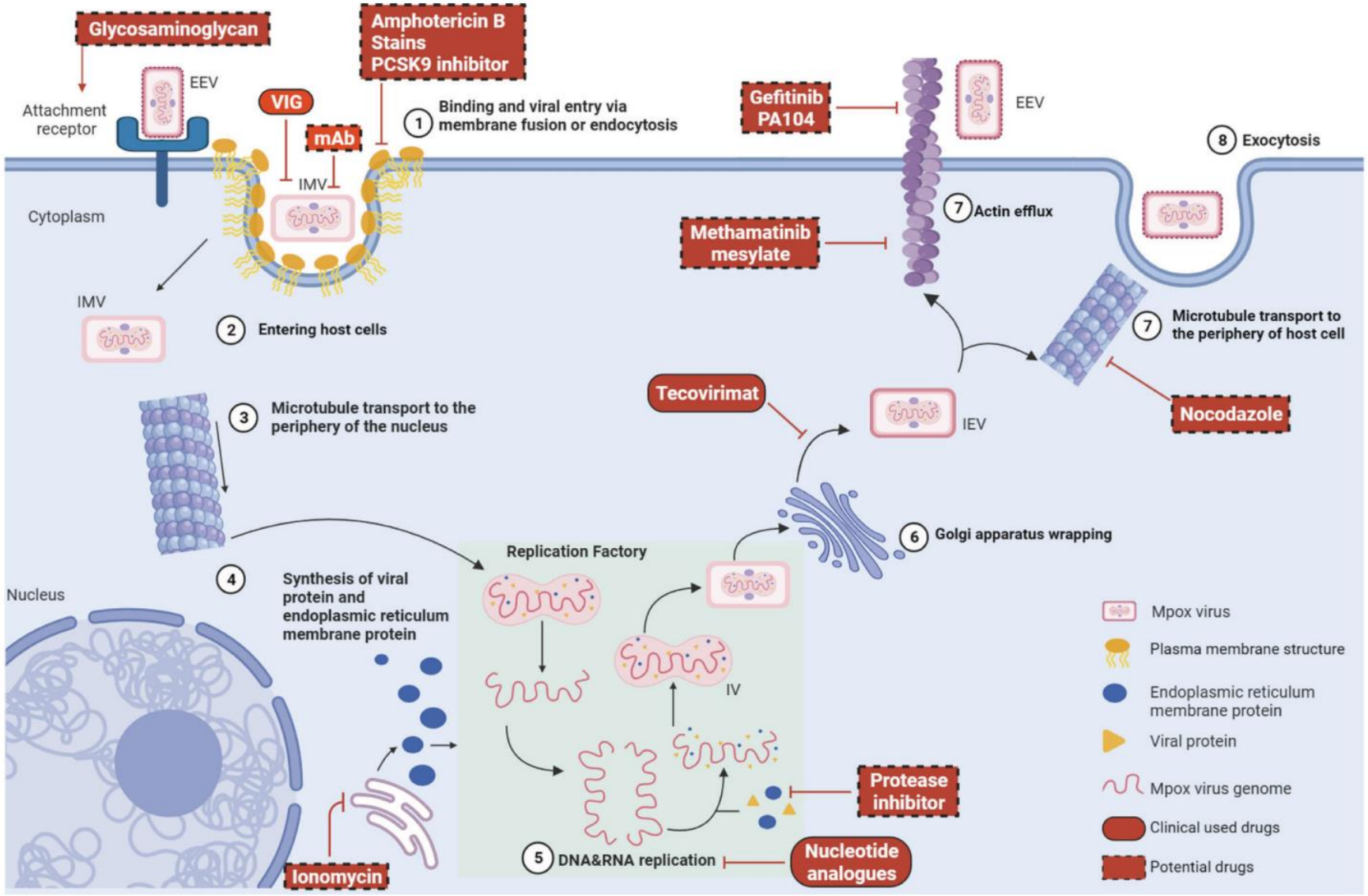
Source: WHO 2024-08-16: mpx-localized-ncdc-training-manual.tmb-1366v.png (723×546) (who.int)

Map of countries were Mpox virus clade 1and / or clade II have been detected



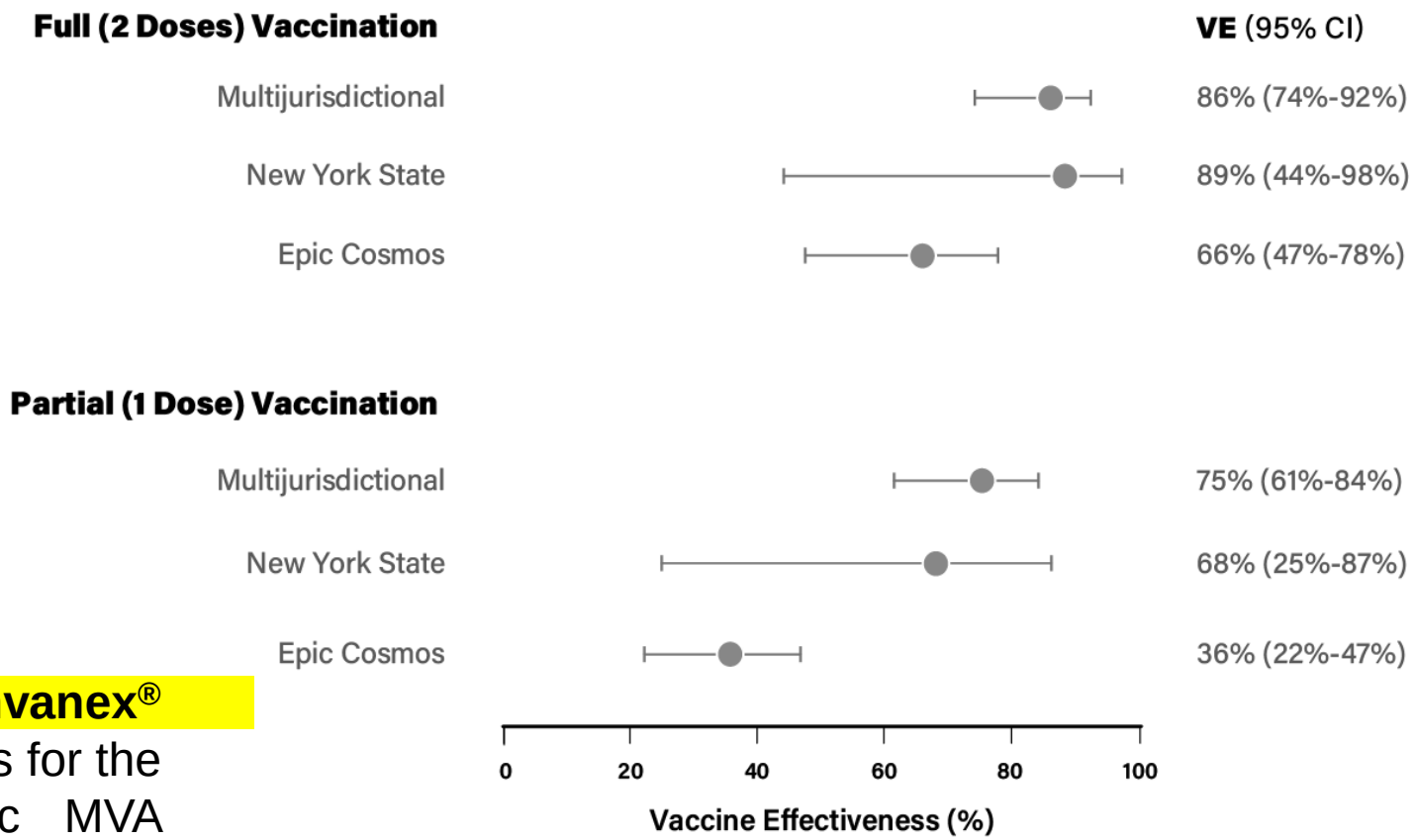
Accessed 2024-08-20 from ECDC
[Risk assessment for the EU/EEA of the mpox epidemic caused by monkeypox virus clade I in affected African countries (europa.eu)]

Mpox – specific therapy



Lu et al, Signal Transduction and Targeted Therapy (2023) 8:458; https://doi.org/10.1038/s41392-023-01675-2

Adjusted vaccine effectiveness (VE) of JYNNEOS vaccine against mpox by study and number of doses



Jynneos® / Imvanex® are the tradenames for the Bavavarian Nordic MVA vaccine in the USA and Europe, respectively.

CDC Jynneos Vaccine Effectiveness (cdc.gov); accessed 20240-08-18

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