

# Global Health Cast 34

April 18, 2023



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Prof. Dr. Joe Schmitt

**Every Week**

12.00 noon - CET

# What we talk about today

- **COVID-19 update**
- **MPOX**
- **RSV-vaccine efficacy in adults**
- **Crimean-Congo hemorrhagic fever**
- **Aerosol amphotericin B against CAPA in ICU-patients**
- **R21/Matrix-M™ malaria vaccine approved in Ghana**

Figure 1. COVID-19 cases reported by WHO Region, and global deaths by 28-day intervals, as of 9 April 2023\*\*

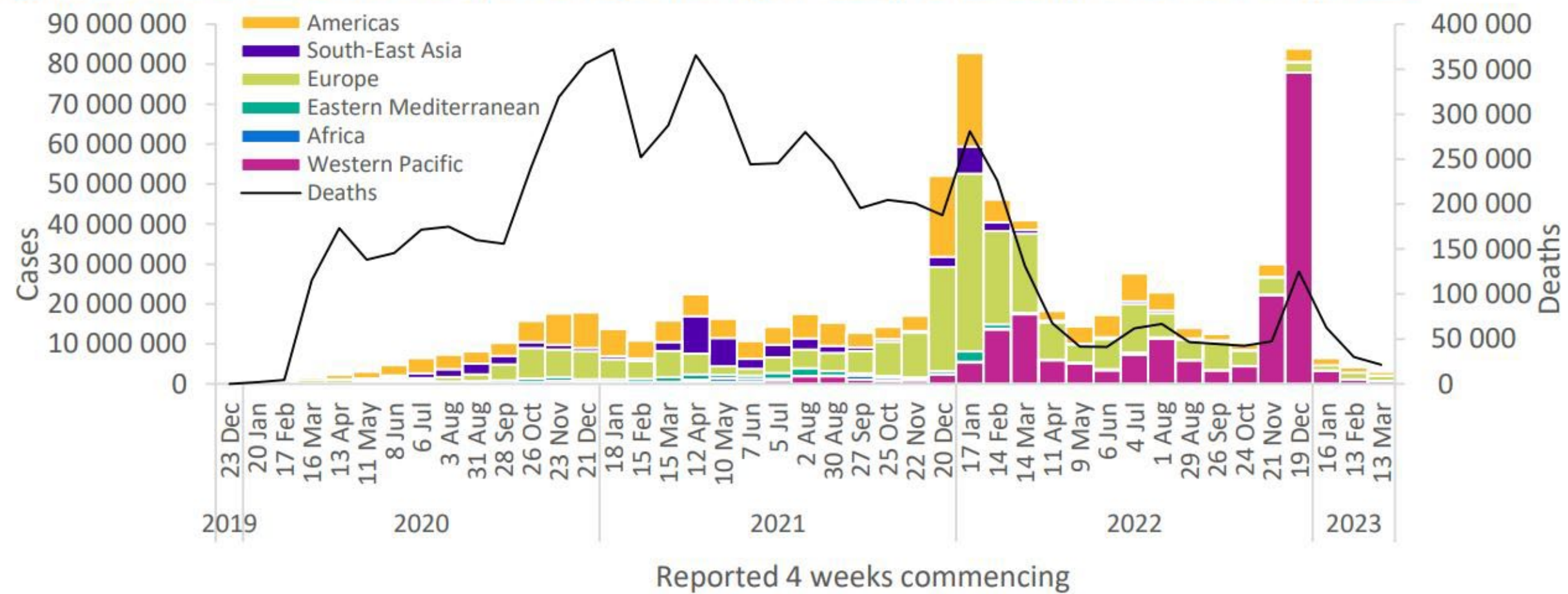


Figure 2. Percentage change in confirmed COVID-19 cases over the last 28 days relative to the previous 28 days, as of 9 April 2023\*\*

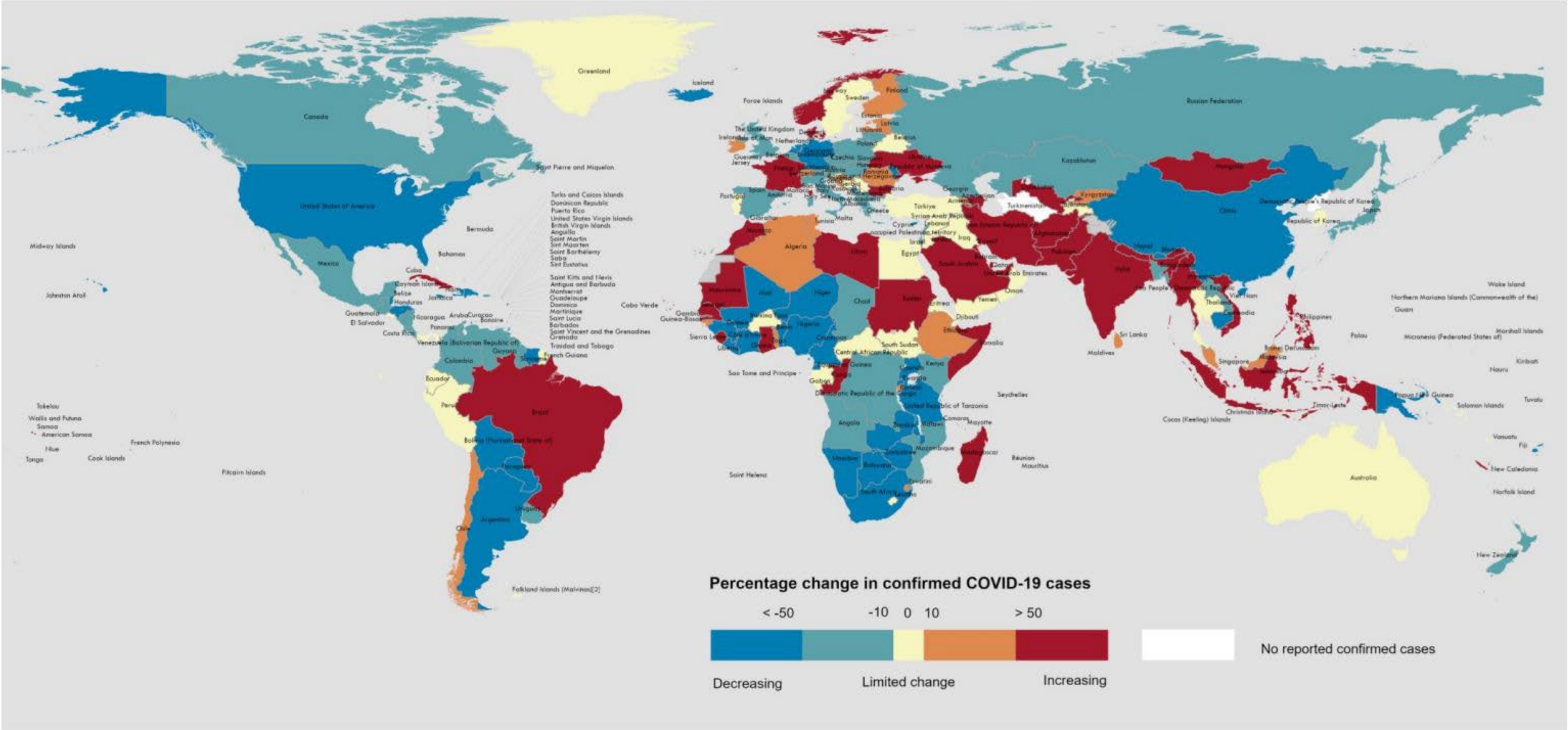
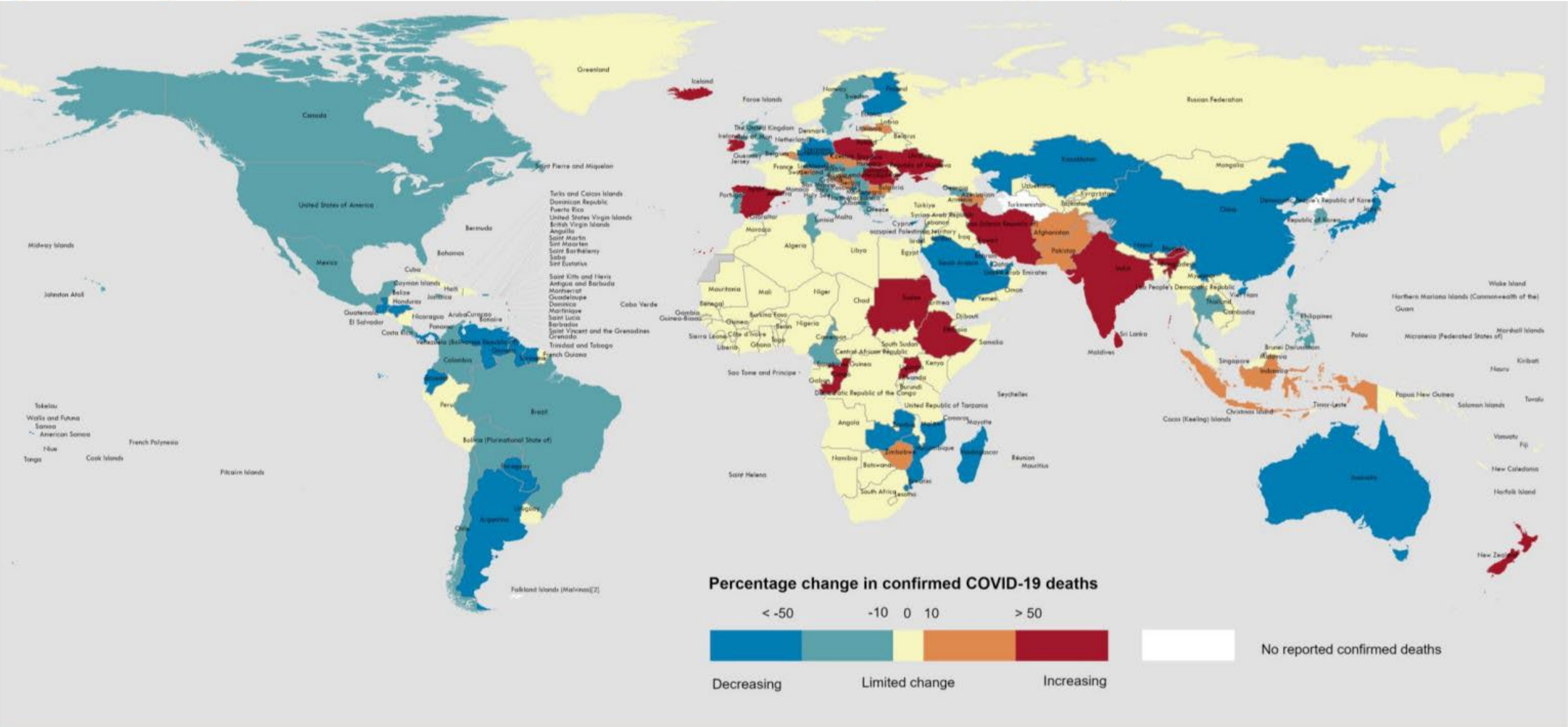
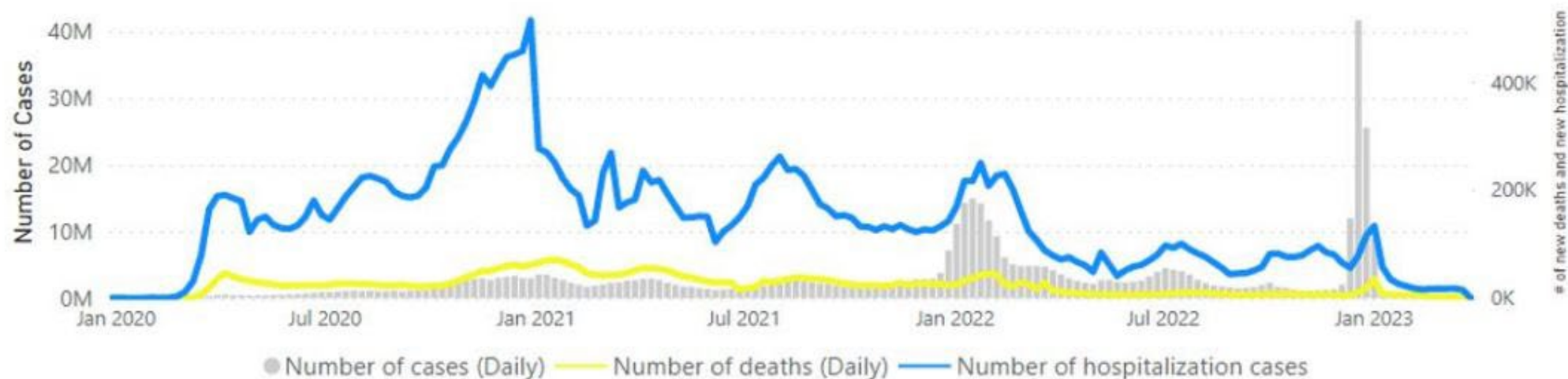




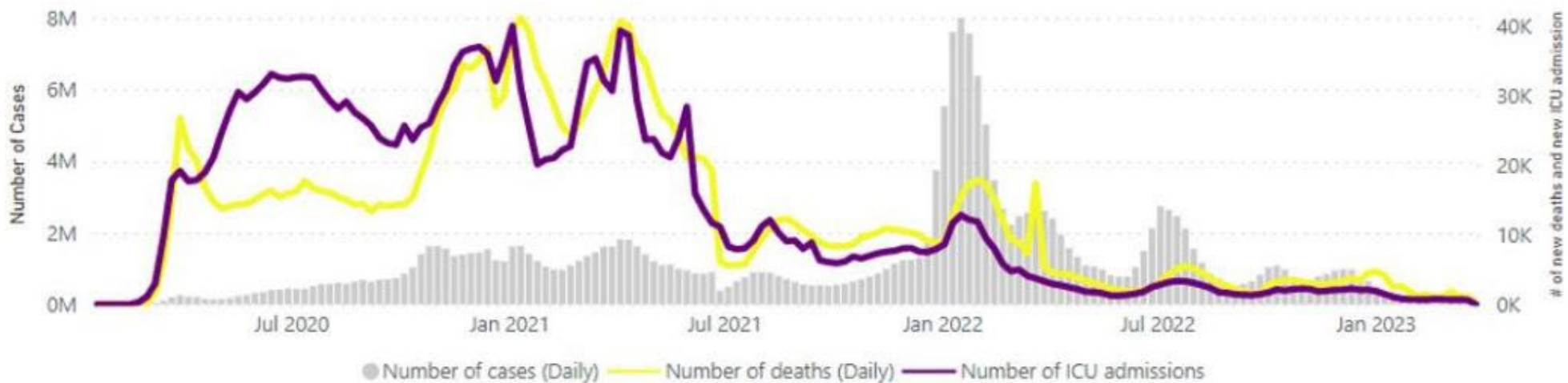
Figure 3. Percentage change in confirmed COVID-19 deaths over the last 28 days relative to the previous 28 days, as of 9 April 2023\*\*



## Global COVID-19 weekly hospitalization admissions



## Global COVID-19 weekly ICU admissions

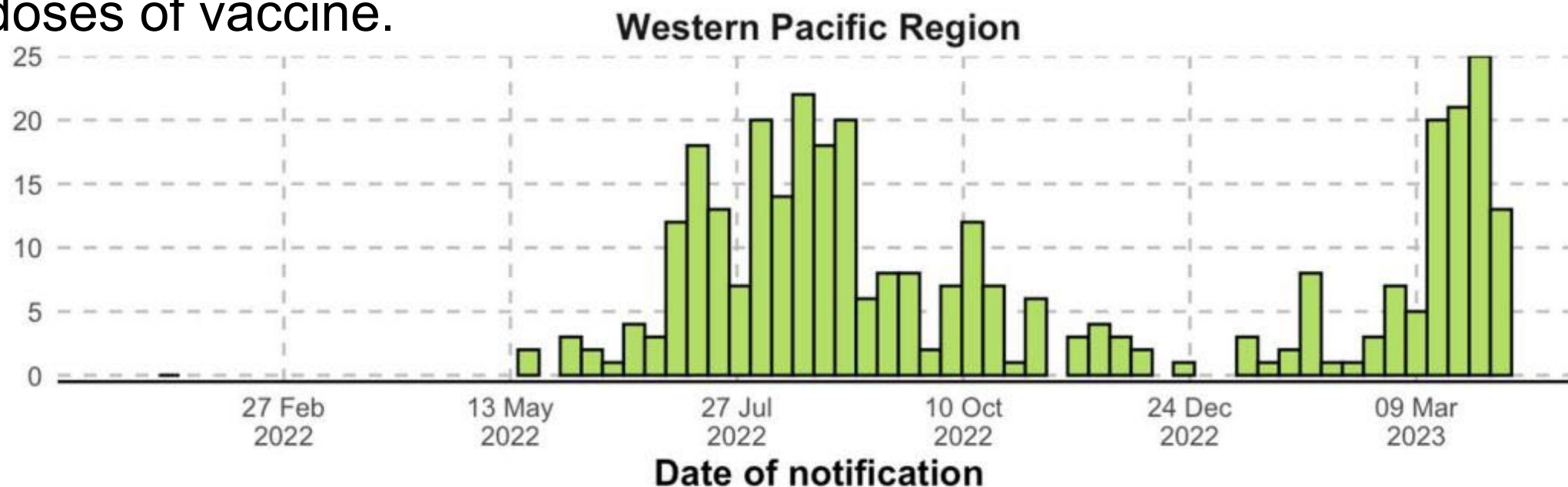


Note: Recent weeks are subject to reporting delays and should not be interpreted as a declining trend.

Source: [WHO Detailed Surveillance Dashboard](https://www.who.int/dashboards/covid19)

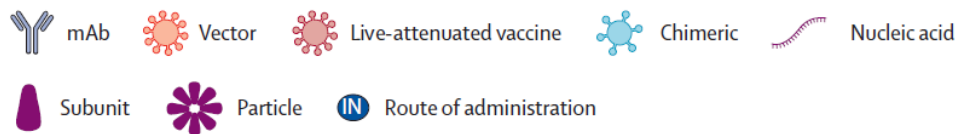
## MPOX UPDATE (April 2023)
























































- Globally, the number of **MPOX** cases reported weekly continues to decline; but the **Western Pacific region** is reporting an increase mainly driven by an outbreak (sustained local transmission) **in Japan**.
- An **MPOX cluster of 17** cases was reported in the Centre-Val del Loire region of France, and among them 10 (59%) are reported to have received two doses of vaccine.



Source: WHO

# RSV vaccine and monoclonal antibody agents by target population



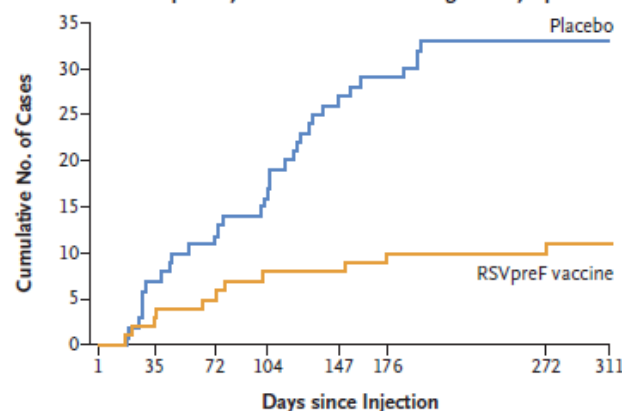
|         |  Paediatric  |  Maternal   |  Older adults   |
|---------|--|---|---|
| Phase 3 | <div> Nirsevimab <br/>Clesrovimab </div>  | <div> RSVPreF <br/>RSVPreF3 </div>   | <div> RSVPreF <br/>RSVPreF3 <br/><br/> Ad26.RSV.PreF <br/>MVA-BN-RSV <br/><br/> mRNA-1345 </div>  |
| Phase 2 | <div> Ad26.RSV.PreF <br/><br/> MV-012-968 <br/>VAD00001 <br/>ΔNS2Δ1313I1314L <br/><br/> BARS13 <br/><br/> Narsyn </div>  |   | <div> BARS13 </div>   |
| Phase 1 | <div> rBCG-N-hRSV <br/>SeV/RSV <br/><br/> 6120/ΔNS1 <br/>6120/ΔNS2/1030s <br/>6120/F1/G2/ΔNS1 <br/>RSV-MinL4.0 <br/>IT-RSV-ΔG <br/>LIDΔM2-2 1030s <br/><br/> RSM01 <br/><br/> mRNA-1345 </div> | <div> V306 VLP <br/><br/> DS-Cav1 </div> | <div> IVX-121 <br/><br/> DS-Cav1 <br/>DPX-RSV <br/>VN-0200 <br/><br/> RSV-MinL4.0 </div> |



# RSV Vaccines and Trial Names

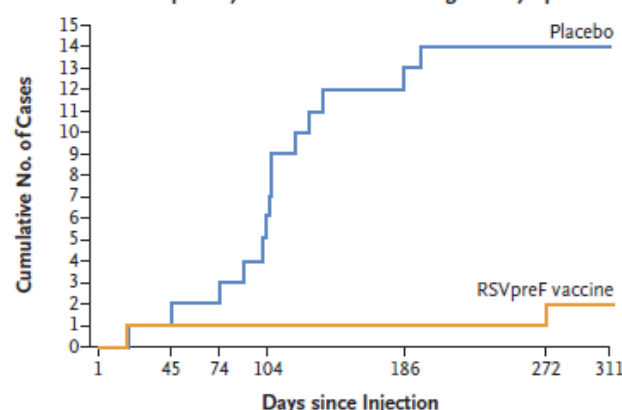
| Late-stage RSV pipeline    |                    |   |   |                 |
|----------------------------|--------------------|---|---|-----------------|
| Project                    | Company            | Description                             | Details   |                 |
| Nirsevimab (SP0232)        | Sanofi/Astrazeneca | Fusion antibody                         | Filed; accepted under accelerated assessment in EU  | Medley, Melody  |
| GSK3844766A                | Glaxosmithkline    | Protein subunit vaccine, adjuvanted     | <a href="#">Aresvi 004 in adults ≥60, data due H1 2022</a>  | Aresvi          |
| RSVPreF3 (GSK3888550A)     | Glaxosmithkline    | Protein subunit vaccine, unadjuvanted   | <a href="#">Trials on pause; Grace maternal protection trial was due to read out H2 2022</a>                            | Grace           |
| RSVpreF (PF-06928316)      | Pfizer             | Protein subunit vaccine                 | Data from <a href="#">Renoir</a> (adults ≥60) and <a href="#">maternal protection trial</a> due H1 2022                 | Renoir, Matisse |
| Ad26.RSV.preF              | Johnson & Johnson  | Adenovirus type 26 viral vector vaccine | <a href="#">Evergreen in adults ≥60, data due H2 2022</a>   | Evergreen       |
| Clesrovimab (MK-1654)      | Merck & Co         | Fusion antibody                         | <a href="#">MK-1654-007</a> in high-risk infants; ph2/3 <a href="#">MK-1654-004</a> in healthy infants, data due 2022   |                 |
| Rilematovir (JNJ-53718678) | Johnson & Johnson  | Oral RSV F-protein fusion inhibitor     | <a href="#">Daisy</a> in hospitalised children; <a href="#">Primrose</a> in adult outpatients; trials started late 2021 | Daisy, Primrose |

**A RSV-Associated Lower Respiratory Tract Illness with  $\geq 2$  Signs or Symptoms**



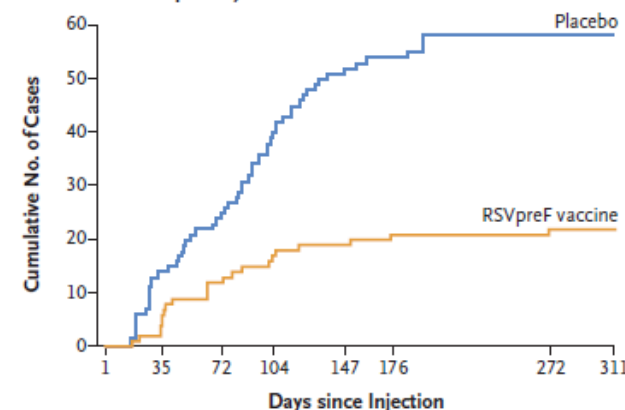
**Vaccine Efficacy  
(96.66% CI)**  
*percent*  
66.7 (28.8–85.8)

**B RSV-Associated Lower Respiratory Tract Illness with  $\geq 3$  Signs or Symptoms**



**Vaccine Efficacy  
(96.66% CI)**  
*percent*  
85.7 (32.0–98.7)

**C RSV-Associated Acute Respiratory Illness**



**Vaccine Efficacy  
(95% CI)**  
*percent*  
62.1 (37.1–77.9)


# Efficacy of Bivalent RSVpreF, Adults $\geq 60$ Years, (Interim)

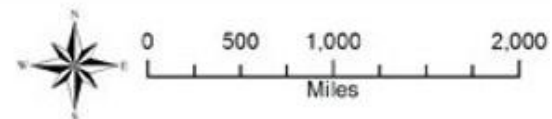
## 9 of the most infectious diseases the WHO has identified to date:

- ✓ **Nipah virus** **Check out GHC 33**
- **Crimean-Congo hemorrhagic fever**
- Lassa fever
- Rift Valley fever
- Zika
- Ebola and Marburg
- Middle East respiratory syndrome (MERS)
- Severe acute respiratory syndrome (SARS)
- COVID-19

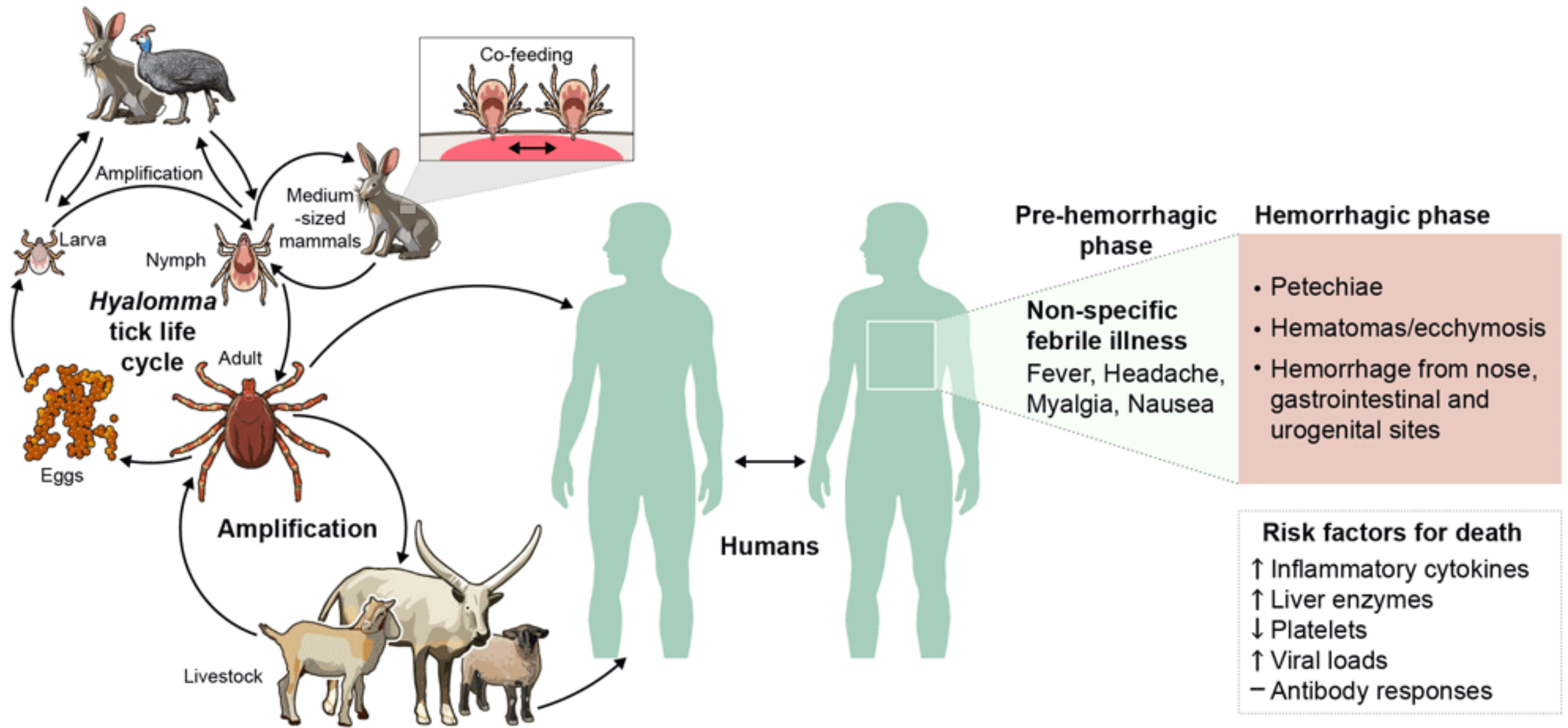
Disease X (any unknown pathogen that could cause a future outbreak)



 Areas endemic for CCHF







# CRIMEAN-CONGO HAEMORRHAGIC FEVER

SOURCE: WORLD HEALTH ORGANISATION

## SEVERE SYMPTOMS

INCLUDE:

Nose and  
Gum Bleeds

Rashes

Liver Failure

Internal Bleeding



**There is currently no vaccine authorized for preventative use against CCHF. There is also no specific treatment for CCHF and care is primarily supportive.**

# Prophylactic nebulized liposomal amphotericin B to reduce the risk of CAPA in mechanically ventilated COVID-19 patients on ICU

- ▶ **COVID-associated pulmonary aspergillosis (CAPA): poor outcome**
  - ▶ Treatments not always effective, prophylaxis is superior to treatment
  - ▶ Amphotericin B highly effectiveness but toxic („amphoterrible“)
- ▶ **Nottingham, retrospective experience:**
  - ▶ December 2020 to February 2021) identified 12 patients with probable CAPA,
  - ▶ Period with prophylaxis: 1 probable case





**R21/Matrix-M™ malaria vaccine developed by University of Oxford receives regulatory clearance for use in Ghana**



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**“ When you understand  
that every opinion is a  
vision loaded with personal  
history, you will begin to  
understand that all  
judgment is a confession. ”**