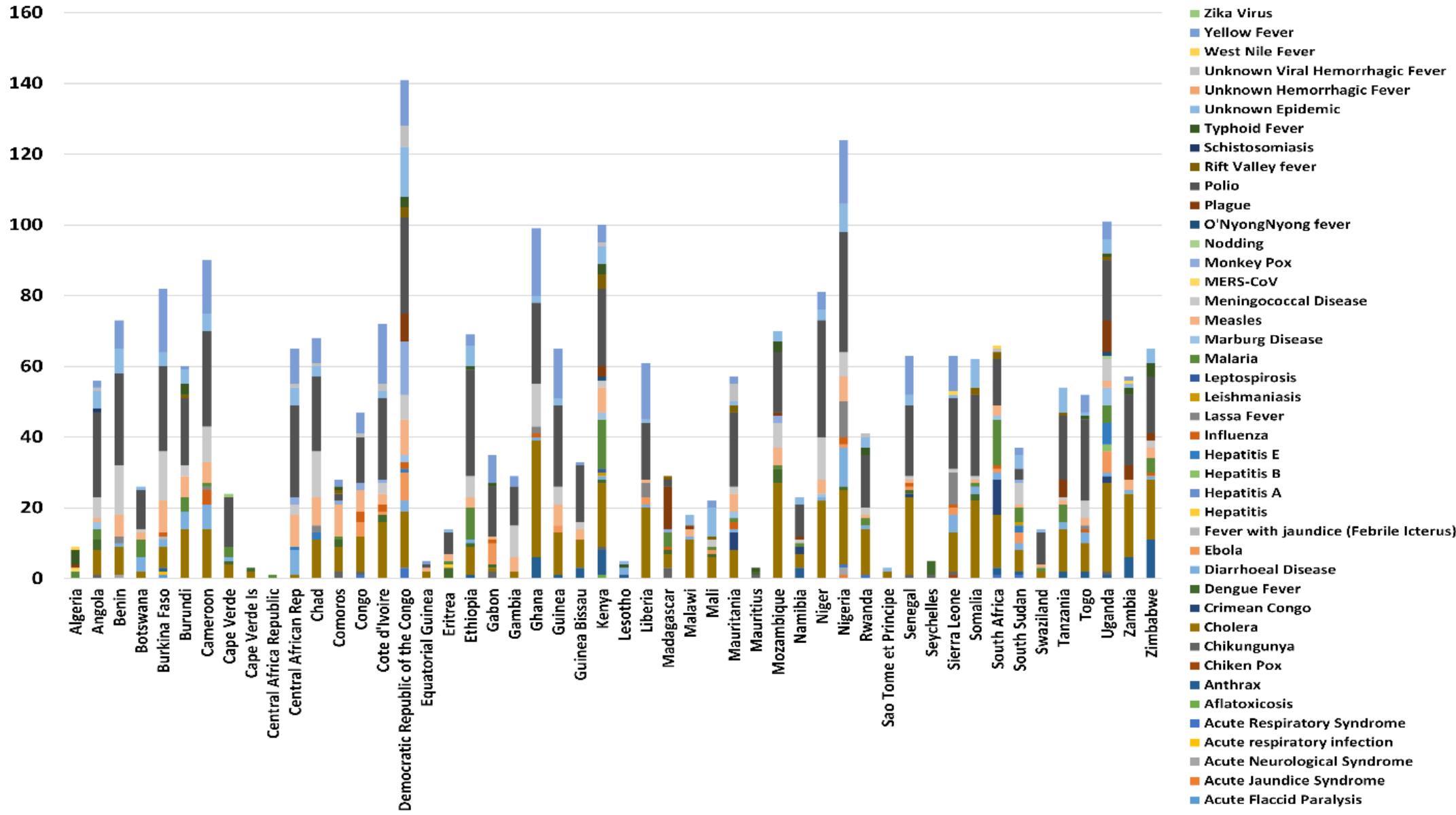


Outbreak and epidemic events by disease in the countries of the WHO African region, 1970-2016



Mapping the risk and distribution of epidemics in the WHO Africa Region, 2016

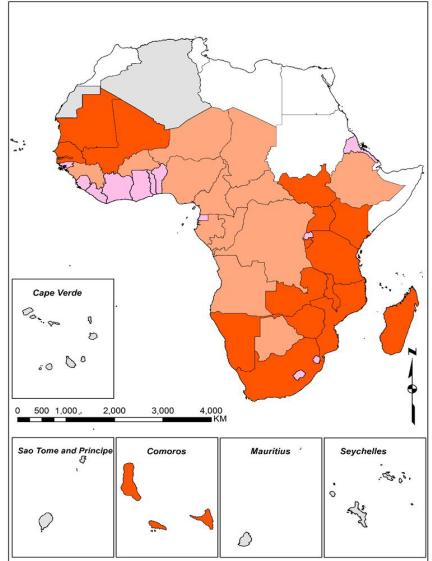
Bubble plot of PHEIC diseases reported in countries of WHO Africa Region, 1970 - 2016.



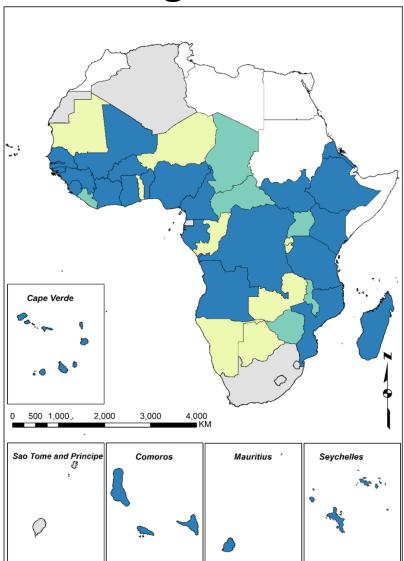
Ebola, Lassa, CCHF, Marburg , RVF, Dengue, WNV, Chikungunya, YF, Zika virus, Plague, Meningitis, Polio

Arboviral disease risk mapping in countries of WHO-Africa region, 1970-2016

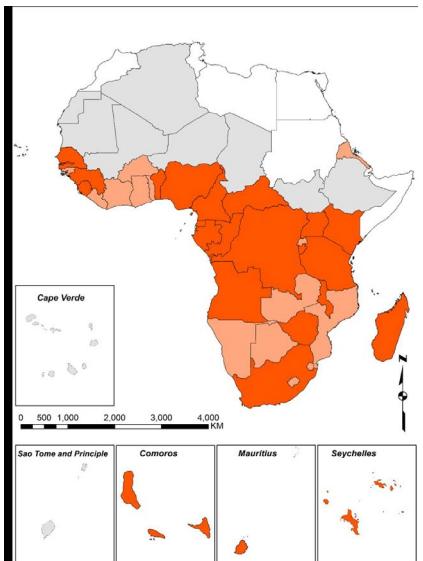
RVF



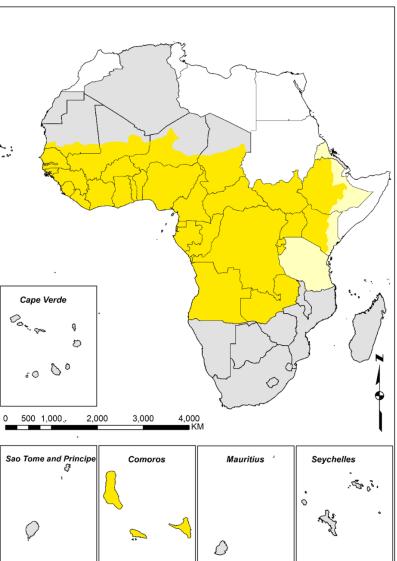
Dengue



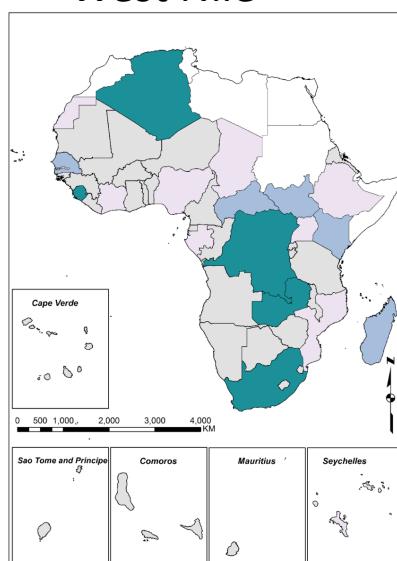
Chikungunya



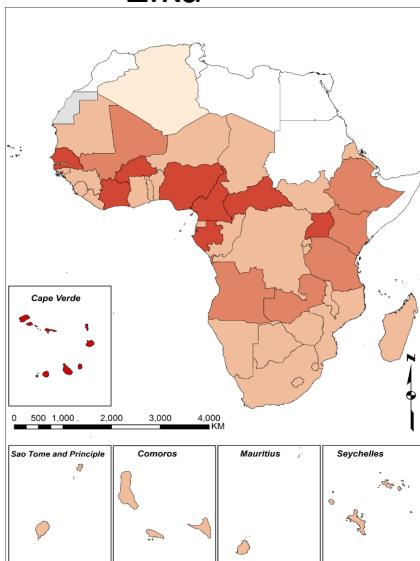
Yellow fever



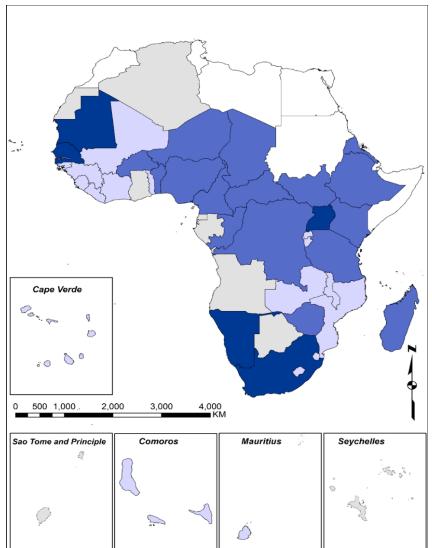
West Nile



Zika



CCHF



Mapping based on:

- Outbreak data
- Serological evidence
- Vector presence

Mapping the risk and distribution of epidemics in the WHO Africa Region, 2016

Arboviral threats and strengthening public health preparedness in Africa

1. Factors favoring global arboviral emergence/re-emergence more severely affect Africa

- Anthropogenic factors -- urbanization, deforestation, land use change, livestock movement
- Climate change

2. Recent enhancement in preparedness and response

- Increased workforce through CDC-supported FETPs & other training programs
- Leadership and advocacy by Africa CDC
- COVID-19 pandemic
- Shift to community-based OH surveillance approaches, EBS vs IBS, mobile-phone reporting

Table 1. Proportion of human cases of acute febrile illness (AFI), severe acute respiratory illness (SARI), influenza-like illness (ILI) and diarrhea with diagnosis.

Year	AFI cases (N)	% with diagnosis (blood slide & culture)	SARI cases (N)	% with diagnosis (blood culture & swab PCR)	ILI cases (N)	% with diagnosis (swab PCR)	Diarrhea cases (N)	% with diagnosis by culture
2007	1184	48.1%	620	21.0%	285	13.3%	374	31.3%
2008	1345	70.7%	697	31.5%	299	21.7%	480	38.6%
2009	2433	64.5%	1539	36.5%	1397	30.1%	766	34.6%
2010	3626	71.1%	1712	22.6%	2464	14.3%	889	37.7%
2011	2569	67.2%	1096	26.9%	1531	18.2%	535	41.5%
Total	11157	64.3%	5664	27.7%	5976	19.3%	3044	36.7%

Leveraging structures of COVID-19 pandemic response for successful control of Ebola in Uganda, 2022-2023

Key COVID-19 Response Structure Adapted to 2022 SUDV



MITIGATIONS	OUTCOMES
Massive community mobilization and contact tracing	Epidemic controlled within 113 days
Targeted lockdown in epicenter	Limited introduction in urban areas; no cross-border transmission
Institutional quarantine of contacts	Limited spread in urban areas; no lockdown of the capital city
Aggressive roll-out of clinical interventions	Reduced case fatality rate
Rapid roll-out of outbreak research	Use of real-time genomics for contact tracing; immediate follow-up and care of survivors

Kyobe et al., Nat Medicine, 2023.

<https://doi.org/10.1038/s41591-023-02395-4>

What can be done to more effectively prevent/reduce arboviral outbreaks?

1. Integrating key arboviruses in WHO-AFRO supported IDSR system

- Expanding EBS

2. Sustainable diagnostics for routine testing of surveillance samples

- RDT – aggressive shift to lateral flow assays?
- accessible genomic tools (wet lab, bioinformatics, translation)

3. Support development and stockpiling of vaccines and therapeutics

- YF-available
- RVF (CEPI), others
- Regional vaccine banks

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Priority diseases

Vaccines can help prevent disease outbreaks from becoming humanitarian crises. CEPI supports the development of vaccines and platform technologies against deadly diseases for which no licensed vaccines are currently available.

THE DISEASES

Coalition for Epidemic Preparedness Innovations

Targeting diseases with epidemic and pandemic potential

Since our launch in 2017, CEPI has announced a number of funding calls

<https://cepi.net/>

Lassa MERS RVF Disease x
Nipah Chikungunya Ebola

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