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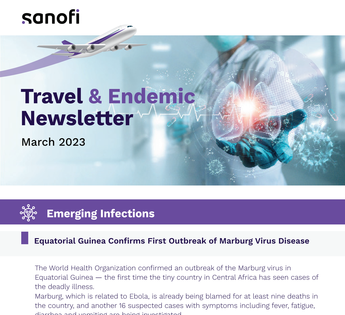

Travel & Endemic Newsletter

March 2023

Emerging Infections

Equatorial Guinea Confirms First Outbreak of Marburg Virus Disease

The World Health Organization confirmed an outbreak of the Marburg virus in Equatorial Guinea — the first time the tiny country in Central Africa has seen cases of the deadly illness.
Marburg, which is related to Ebola, is already being blamed for at least nine deaths in the country, and another 16 suspected cases with symptoms including fever, fatigue, diarrhea and vomiting are being investigated.
Without treatment, Marburg can be fatal in up to 88 per cent of people.
There are no authorized vaccines or drugs to treat Marburg, but rehydration treatment to alleviate symptoms can improve the chances of survival.
Marburg virus is believed to have originated in African fruit bats. It was first identified in 1967 in Germany and the former Yugoslavia, according to the U.S. Centers for Disease Control and Prevention, among people who had been working with green monkeys that had been imported from Uganda.

According to the World Health Organization (WHO), people can contract the virus through prolonged exposure in mines or caves where the bat colonies live.
The virus spreads between humans through direct contact with blood or other bodily fluids of an infected individual, or with surfaces contaminated with the virus, such as clothing or bed sheets.

Link

Dengue

Dengue in Pregnancy: A Southeast Asian Perspective

Dengue cases have been rising in recent years.
Dengue is endemic to the Southeastern geographical area of Asia (SEA), spreading through the mosquito vector Aedes aegypti . The countries included in the geographical region of SEA include Brunei, Myanmar, Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam. Dengue cases were seen more often in females than males.
Research has shown detrimental outcomes for pregnant infected women. This review describe dengue's effects on pregnancy systemically and emphasize the existing gaps in the literature. Dengue in pregnancy increases the risk of pre-eclampsia, Dengue Hemorrhagic Fever (DHF), fetal distress, preterm delivery, Caesarean delivery and maternal mortality. Vertical transmission, intrauterine growth restriction, and stillbirth are possible sequelae of dengue in fetuses.
The authors found that trimester-specific physiological impacts of dengue in pregnancy (to both mother and child) and investigations and management methods demanded further research, especially in the SEA region.

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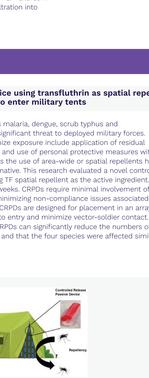

Map of geographical Southeast Asia. The incidence of dengue in each country, the year the data were collected, and the number of mortalities due to dengue

Rabies

Human rabies despite post-exposure prophylaxis: a systematic review of fatal breakthrough infections after zoonotic exposures

A systematic review of articles published between Jan 1, 1980 and June 1, 2022 to characterize Rabies breakthrough infections.
Of 86 breakthrough infections with data, median time from exposure to symptom onset was 20 days (IQR 16–24). Most (89 [77%] of 115) participants received PEP within 2 days of an exposure. Severe wounds (defined as those involving multiple wound sites or bites to the head, face, or neck) were common (80 [69%] of 116 [with data]). Other possible causes for breakthrough infections included errors in the administration of rabies immunoglobulin, delays in seeking health care, and comorbidities or immunosuppression. Timely and appropriate administration of PEP is crucial to prevent rabies, and although people with high-risk exposures or immunosuppression can develop rabies despite adherence to core practices, this occurrence remains exceedingly rare.

Link

Should Favipiravir be Used as an Additional Drug in Case of Severe Animal Bites on the Face Especially Into the Eyes/ Lips or Aerosol Exposure to Rabies Virus to Prevent Rabies PEP Failures?

Authors describe four cases of PEP failure despite complete prophylaxis with vaccine and Rabies Immunoglobulins (RIG) over the past. All failures were due to suspected rabid dog bites on the face, especially on cheeks, lips, or eyes where complete infiltration of RIG may not have been possible leading to PEP failure. Authors have the opinion that in such situations, it may be worth adding another viricidal oral drug favipiravir along with rabies PEP that could help prevent PEP failure in situations where complete RIG infiltration into wounds is difficult to achieve.

Link

Mosquitos

Novel controlled release device using transfluthrin as spatial repellent to prevent mosquitoes to enter military tents

Arthropod-borne diseases, such as malaria, dengue, scrub typhus and leishmaniasis, continue to pose a significant threat to deployed military forces. Traditional methods used to minimize exposure include application of residual insecticides on tents and buildings and use of personal protective measures with limited impact from these methods the use of area-wide or spatial repellents has been suggested as a possible alternative. This research evaluated a novel controlled release passive device (CPRD) using TF spatial repellent as the active ingredient. The device should remain active for 4 weeks. CRPDs require minimal involvement of the deployed soldier with the goal of minimizing non-compliance issues associated with use of topical repellents. The CRPDs are designed for placement in an array at a tent entrance to prevent mosquito entry and minimize vector-soldier contact. Results indicate that TF-charged CRPDs can significantly reduce the numbers of mosquitoes entering military tents and that the four species were affected similarly by the TF.

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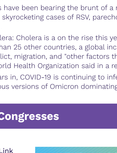

Climate change may make it easier for mosquitoes to spread malaria

Facing a warming climate, many tropical species—including the arthropod vectors of several infectious diseases—once confined to the warmest parts of the globe are expected to climb to higher altitudes and creep farther from the equator. That already may be happening with mosquitoes carrying malaria (Anopheles). Researchers found the limits of the malaria mosquitoes' ranges moved away from the equator by 4.7 kilometers a year on average over the past century.

These shifts would be consistent with the local velocity of recent climate change, and might help explain the incursion of malaria transmission into new areas over the past few decades.

Anopheles maculipennis (malaria mosquito)

Link

A Secret Weapon in Preventing the Next Pandemic: Fruit Bats

More than four dozen Jamaican fruit bats destined for a lab in Bozeman, Montana, are set to become part of an experiment with an ambitious goal: predicting the next global pandemic.

Researchers believe pressure put on bats by climate change and encroachment from human development have increased the frequency of viruses jumping from bats to people, causing what are known as zoonotic diseases.

Link

8 infectious diseases that made a comeback in 2022 unexpectedly — and illnesses that could surge in 2023

2022 was a banner year for infectious diseases, due to a wide web of complex factors.

Mpox, cholera, polio, and the measles all turned up in places where they hadn't been seen in years — or ever.

Some of the outbreaks were short lived, while others will likely continue well into 2023.

Link

- Polio re-emerged in the UK and the US after nearly a decade of no cases: Polio only circulates in Pakistan and Afghanistan these days, thanks to near-universal vaccination.
- Scarlet fever killed at least 25 children in the UK, who had a nasty version of strep.
- Measles is spreading fast among unvaccinated children. The CDC says measles vaccine coverage has "steadily declined since the beginning of the COVID-19 pandemic," both in the US, and around the globe. Disease experts expect areas of the world without 95% of their population vaccinated against measles may see more outbreaks in 2023.
- Mpox, a virus which had rarely spread outside of endemic countries in central and west Africa before, roared across the globe, with thousands of infections diagnosed across six continents.
- Babies and toddlers have been bearing the brunt of a nasty respiratory illness season, with skyrocketing cases of RSV, parechovirus, and other infectious diseases.
- An outbreak of Cholera: Cholera is a on the rise this year in Haiti, Syria, Malawi, and more than 25 other countries, a global increase prompted by more flooding, conflict, migration, and other factors that limit access to clean water," the World Health Organization said in a recent dispatch.
- More than three years in, COVID-19 is continuing to infect and kill millions of people — with various versions of Omicron dominating, for now.

Upcoming Congresses

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