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Travel & Endemic Newsletter

June 2023

Emerging Infections

Cholera worldwide overview

As of 24 April 2023, 49 857 new cholera cases, including 298 new deaths, have been reported worldwide. The five countries reporting the greatest number of new cases are Pakistan, Bangladesh, Mozambique, Syria, and Malawi. The five countries reporting the greatest number of new deaths are Nigeria, Malawi, Mozambique, Haiti, and Kenya. In addition, 99 136 new cases were reported or collected retrospectively from before 23 March 2023.

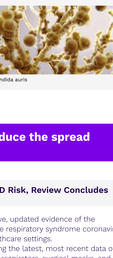
Link

WHO assesses the risk at the global level as very high.

Link

South Africa joins countries grappling with cholera on the continent

In total, 10 confirmed cholera cases including one death has been reported since 5 February 2023.
All cases are in Gauteng Province; no confirmed cases have been reported in other provinces. The cases range in age from 10 to 50 years.
In eight cases, Vibrio cholerae was isolated from stool or rectal swab specimens in and further haracterized as toxigenic Vibrio cholerae O1 Serotype Ogawa; two cases were negative on culture and diagnosed by PCR tests. All isolates have tested susceptible to ciprofloxacin and azithromycin.
The first three cases in this outbreak were imported or import-related cases following travel to Malawi.
All subsequent cases acquired infection locally and are classified as indigenous cases.
Some cases reported exposure to, or consumption of, untreated water from the Jukskei and Klip rivers and these are being investigated as possible sources of infection



Link

Candida auris as an urgent antimicrobial-resistant threat

Cases of Candida auris have tripled in the U.S from 2019 to 2021, according to national surveillance data.
From 2019 through 2021, there were a total of 3,270 clinical cases and 7,413 screening cases of C. auris, with 17 states identifying their first cases. Since its detection in the U.S., C. auris has continued to cause illness and death nationwide. Treatment-resistant cases were on the rise, from six pan-resistant and three echinocandin-resistant isolates reported in 2020, up to seven and 19, respectively, in 2021. The rise in echinocandin-resistant cases and evidence of transmission is particularly concerning because echinocandins are first-line therapy for invasive Candida infections, including C auris. These findings highlight the need for improved detection and infection control practices to prevent spread of C auris.

Link to article

The CDC's 2019 Antibiotic Resistance Threats Report identified C. auris as an urgent threat in the U.S. and, in 2022, the World Health Organization (WHO) put it on the fungal priority pathogens.


Candida auris

Physical interventions to reduce the spread of respiratory viruses

Masking Yields Small Reduction in COVID Risk, Review Concludes

In a recent rapid review researchers presented live, updated evidence of the effectiveness of masks in preventing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in community and healthcare settings.
In this study, the researchers focused on retrieving the latest, most recent data of the usefulness of three types of masks, viz., N95 respirators, surgical masks, and cloth masks, in preventing SARS-CoV-2 infection across different settings based on three RCTs and 21 observational studies.
The authors concluded that masks may be associated with a small reduction in risk for SARS-CoV-2 infection in community settings and that surgical masks and N95 respirators may be associated with similar infection risk in routine patient care settings, but a beneficial effect of N95 respirators cannot be ruled out.

Link

Physical interventions to interrupt or reduce the spread of respiratory viruses

An update of a Cochrane Review that assess the effectiveness of physical interventions (screening at entry ports, isolation, quarantine, physical distancing, personal protection, hand hygiene, face masks, glasses, and gargling) to interrupt or reduce the spread of acute respiratory viruses (for example: influenza (H1N1), severe acute respiratory syndrome (SARS), and coronavirus disease 2019 (COVID-19)). The Authors' conclusions are that there is uncertainty about the effects of face masks. The pooled results of RCTs did not show a clear reduction in respiratory viral infection with the use of medical/surgical masks. There were no clear differences between the use of medical/surgical masks compared with N95/P2 respirators in healthcare workers when used in routine care to reduce respiratory viral infection. Hand hygiene is likely to modestly reduce the burden of respiratory illness.

Link

Malaria

Prevalence, anti-malarial chemoprophylaxis and causes of deaths for severe imported malaria: A systematic review and meta-analysis

The authors searched for studies reporting deaths attributable to severe imported malaria and identified 52 studies that were conducted in Europe, North America and Asia. The pooled prevalence of severe imported malaria was 12.5% , the pooled prevalence of deaths attributable to severe imported malaria was 5.1%, the pooled prevalence of adequate anti-malarial chemoprophylaxis among patients with severe imported malaria was 9.7%. The most common cause of death was multi-organ failure (12.3%).
The results highlighted the need for education and preventative measures for travellers, immigrants, or workers who plan to visit malaria-endemic areas to minimize the risk of severe disease or death.

Link

Mosquito saliva and Dengue

Mosquito saliva can weaken body's defenses against deadly dengue viruses, scientists discover

There is great interest in identifying transmission-enhancing factors in mosquito saliva in order to counteract them. Scientists who study biting behavior and properties of mosquito saliva have concluded that there may be components in saliva that promote virus infection.
This study show that when dengue virus infects mosquitoes one can find in their saliva not only the expected dengue viruses but also a dengue virus product that can reduce our anti-virus defense systems. It happens that this product is what is known as a non-coding RNA, a class of molecules that have recently been shown to mediate important biological regulation. The researchers propose that by introducing this RNA at the biting site dengue infected saliva prepares the terrain for an efficient infection and gives the virus an advantage in the first battle between it and human immune defenses.
The new discovery, from a University of Virginia School of Medicine scientist and his collaborators, helps explain why the disease is so easily transmitted and could eventually lead to new ways to prevent infection.

Link to article

Link to Peer-Reviewed Publication

Vaccines Development

Meningococcal ACWYX Conjugate Vaccine

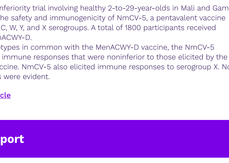
A phase 3, noninferiority trial involving healthy 2-to-29-year-olds in Mali and Gambia reveal data on the safety and immunogenicity of NmCV-5, a pentavalent vaccine targeting the A, C, W, Y, and X serogroups. A total of 1800 participants received NmCV-5 or MenACWY-D.
For all four serotypes in common with the MenACWY-D vaccine, the NmCV-5 vaccine elicited immune responses that were noninferior to those elicited by the MenACWY-D vaccine. NmCV-5 also elicited immune responses to serogroup X. No safety concerns were evident.

Link to article

Case report

First breakthrough rabies infection in US reported in immunocompromised man

This is the first breakthrough rabies infection despite appropriate PEP in the U.S.
An 84-year-old man reportedly died from rabies 6 months after being bitten by a bat and receiving timely rabies post-exposure prophylaxis.
The patient had an underlying immunocompromising condition that likely prevented proper response to the rabies vaccines. The researchers learned that rabies virus antibodies were present in serum and cerebrospinal fluid and were non-neutralizing, while blood testing done before the patient's death revealed that he had unrecognized monoclonal gammopathy of "unknown significance." After reviewing his autopsy, the researchers found rabies meningoencephalitis and metastatic prostatic adenocarcinoma. The researchers conclusion was that host-mediated primary vaccine failure attributed to previously unrecognized impaired immunity is the most likely explanation for this breakthrough infection. Clinicians should consider measuring rabies neutralizing antibody titers after completion of PEP if there is any suspicion for immunocompromise.



Link to article

Link to article from March Newsletter:

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

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