Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance. January 2019

*Incident assessment:

<table>
<thead>
<tr>
<th>Deteriorating</th>
<th>No Change</th>
<th>Improving</th>
<th>Undetermined</th>
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<td>Incident is deteriorating with increased implications for public health</td>
<td>Update does not alter current assessment of public health implications</td>
<td>Incident is improving with decreasing implications for public health</td>
<td>Insufficient information available to determine potential public health implications</td>
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Notable incidents of public health significance

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<th>Incident assessment*</th>
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Ebola virus disease (EVD), Democratic Republic of Congo

Six months after the Ebola outbreak was officially declared, it remains widespread and difficult to control. Although the outbreak is still localised to North Kivu and Ituri [map], as of 1 February, a total of 769 confirmed and probable cases have been reported across 18 health zones. This is an increase of 155 confirmed cases in the past month, compared to 168 in December. Overall, 65 health workers have been infected to date. Katwa, Butembo and Beni are the main hot spots, and most cases continue to be reported in persons not known to be contacts, a clear indicator of ongoing mistrust and resistance amongst communities. Two new health zones, Manguredjipa and Kayina, have reported confirmed cases, highlighting the continued risk of spread. At the end of January, a confirmed case with links to Katwa was hospitalised in Haut-Uele province (north of the affected area) and prior to confirmation, a vaccination team was sent to the area to vaccinate healthcare workers and family members. To date, no further cases have been identified there.

The ongoing outbreaks in Katwa and Butembo health zones are being driven in part by nosocomial transmission in public and private health centres. Since the beginning of December, 85% of cases in these areas had visited or worked in a healthcare facility before onset of symptoms. In Katwa, transmission is also being driven by community-based transmission as nearly half of cases reported having attended a funeral in the weeks prior to onset of illness.

Since the vaccination campaign began in August, 70,611 people have been vaccinated. While no confirmed cases in neighbouring countries have been reported so far, South Sudan began vaccinating frontline health workers in high-risk districts in preparation.

Other incidents of interest

- WHO announced that falsified rabies vaccines had been identified in the Philippines. Sanofi Pasteur, the manufacturer indicated on the labels, confirmed that they did not manufacture the vaccines. Investigations are ongoing to assess the potential risk to public health. UK alerts were posted by PHE and NaTHNaC.
- the incidence of Lassa fever in Nigeria has been steadily increasing since December 2018, and an outbreak was declared on 21 January. As of 27 January, a total of 538
suspected cases, including 213 confirmed, have been reported since the beginning of the year. Sharp increases were observed in weeks 3 and 4. While the current resurgence is following a typical seasonal pattern, there has been a significant increase in cases compared to the same time period last year

- for the first time in West Africa, Zaire Ebola virus was discovered in a greater long-fingered bat (Mineopterus inflatus) in Liberia. More than 5,000 bats around the country were sampled between 2016 and 2018, but to date only one tested positive. Sequencing is awaited. No human Ebola cases have been reported in Liberia since the last case associated with the West African outbreak in 2015
- while hantaviruses are endemic in Argentina, an unusual increase in cases was reported from Epuyen, Chubut Province (see map) in mid-December. As of 31 January, a total of 31 cases have been reported. The index case appears to have had environmental exposure prior to symptom onset. All additional cases were epidemiologically linked to previously confirmed cases. Potential human-to-human transmission is under investigation, suggesting Andes hantavirus as the cause. One case was also reported in Los Lagos, Chile with history of travel to the affected area and contact with a confirmed case
- Oman reported 5 laboratory confirmed MERS cases in January. These are the first confirmed cases in Oman in 2019, bringing the total reported since 2013 to 16
- two unrelated cases of extremely drug-resistant Neisseria gonorrhoeae were reported in the UK. Both reported recent travel to and sexual encounters in Ibiza, Spain in 2018. The antibiograms of the two isolates are different from the previous UK case and the two cases reported in Australia in 2018. The epidemiological link to sexual encounters in Spain indicates potential international spread of the resistant strain, and a possible threat to future therapy of gonorrhoea
- Rift Valley fever was first identified in Mayotte (an island in the Indian Ocean, close to Madagascar) in 2007, with sporadic human and animal cases. Since 2013, no cases were reported until November 2018. Since then 19 human cases of Rift Valley fever have been reported (all locally-acquired). Nine (of 14 interviewed) reported direct contact with animals or lived close to farms
- new outbreak of circulating vaccine derived poliovirus (cVDPV) in Mozambique - a single case of acute flaccid paralysis and a community contact were found to be positive for cVDPV type 2. The case, whose onset was in October 2018, and the community contact were both in Molumbo district, Zambezia province. Mozambique last reported a case of cVDPV2 in January 2017, in the same province. Vaccine coverage remains low at subnational levels (60% coverage in Zambezia province)

Publications of interest

- atypical presentation of a novel strain of cowpox virus France. Following a superficial injury to the torso with a sharp metal rail, the male patient developed a non-healing lesion. This later turned into a black eschar with painful spreading cellulitis, and many subcutaneous abscesses. Lesions continued to develop over an 8-week period and morphine was required for pain management. Routine skin biopsy cultures failed to yield any fungi, bacteria or mycobacteria, but a specific orthopoxvirus PCR was positive. The lesions eventually healed after 9 months. He had been vaccinated against smallpox when he was 1 year old, but it was postulated that infection still occurred due either to an absence of cross-protective antibodies or too long a period (>40 years) between immunisation and exposure
- since September 2016 Yemen has been experiencing the largest known cholera epidemic in history. Genomic analyses determined that the same clone of V. cholerae
was responsible for the two outbreak waves, and it is of a single sublineage (T13) of the seventh pandemic V. cholerae O1 biotype El Tor lineage. This originated in South Asia and caused outbreaks in East Africa before appearing in Yemen. It is notable for being susceptible to polymyxin B, when resistance to this antibiotic is considered a marker for the El Tor biotype.

- **many thousands of acute encephalitis syndrome (AES) cases are reported annually in India**, but only a small proportion (10-15%) are microbiologically diagnosed with Japanese encephalitis virus (JEV) being the only routinely tested agent. Between 2014-17, comprehensive AES surveillance was implemented to identify other possible causes. Of 10,107 AES patients, an aetiology was established for nearly half (49.2%), with JEV, scrub typhus and dengue accounting for 88%. Using dengue IgM and/or PCR, 5.2% of AES cases had evidence of acute dengue infection, a finding that has implications for routine testing.

- a **third human case of acute hepatitis caused by a novel rat hepatitis E** virus strain was reported in Canada, for the first time in an immunocompetent individual. Following extensive travel in Africa, the patient presented to hospital with a rash, jaundice, nausea and decreased appetite. A routine HEV PCR was negative and a broadly reactive PCR detecting divergent HEV variants was required to diagnose the infection. Phyllogenetic analysis showed that the virus was genetically distinct from the recently described transplant patient infected with rat HEV in Hong Kong. The diagnostic challenges encountered may mean that rat HEV strains are under-recognised as a cause of hepatitis.

- **Lassa fever in travellers**: in a global review of documented cases between 1969 and 2016, 33 people with a history of travel to West Africa were diagnosed with Lassa fever. Clinical outcome was known for 31 patients of whom 12 died (39%). Eleven were healthcare workers with either known or suspected exposures, and ten had exposures to rodents, rural or agricultural environments. Delays in diagnostic suspicion commonly occurred, with a median of 5 days, most likely due to the non-specific nature of presenting signs and symptoms despite knowledge of the travel history. Secondary transmission was rare with only 2 instances reported.

- canine leishmaniasis is a zoonotic parasitic disease caused by several *Leishmania* species. The **first case of canine leishmaniosis in the UK without a history of travel to an endemic area** was recently reported. The puppy had prior contact with a dog that had been imported from Spain and euthanised 6 months previously due to untreated severe leishmaniosis. This suggests dog-to-dog transmission in the UK, given the absence of appropriate sandfly vectors.

- Madariaga virus (MADV), the South American variant of eastern equine encephalitis virus, has been found primarily in animals in South and Central America, and rarely as a cause of encephalitis in humans. While investigating the aetiology of acute febrile illness among school children in Haiti, **MADV was identified for the first time**. Eight children were positive by virus culture, of which 5 were also positive on PCR. All viruses were genetically similar and appeared to have been recently introduced from Panama (the location of an outbreak in 2010).

- after 7 years without a case, **South Africa reported 8 laboratory confirmed cases of Rift Valley fever (RVFV)** in 2018. Phylogenetic analyses determined that the strain responsible for these cases was different from that which caused an epidemic during 2010-2011, suggesting ongoing activity and evolution of RVFV during non-outbreak periods.

- following an environmental study testing pyrethroid susceptibilities for 33 *Aedes albopictus* populations from several regions around the world, the **first evidence of the V1016G allele in mosquitoes was found in Italy and Vietnam**. This allele was found to
confer a higher level of pyrethroid resistance than previously known alleles, and has implications for future control of arboviral infections, including in Europe

- the UK One Health Report on antibiotic use and antibiotic resistance for 2013-2017 was published. This is a cross-government initiative from the Veterinary Medicines Directorate, Food Standards Agency, and Public Health England, that brings together UK data on antibiotic resistance in key bacteria that are common to animals and humans

- updated guidelines on malaria prevention for travellers from the UK were published by the PHE Advisory Committee on Malaria Prevention

- special Ebola issue of the WHO Weekly Epidemiological Record: contains papers on the 2018 EVD outbreaks in DRC, including social science, surveillance, international spread measures, risk communication and lessons learnt

- a review of bat viruses and potential spillover to animals and humans was published in Current Opinion in Virology

### Novel agents, rare pathogens and disorders

- for the first time, Mengla virus, a novel filovirus, was discovered in a Rousettus bat in China. In vitro studies demonstrated a broad cell tropism almost identical to that of other filoviruses, highlighting the need for further study to assess the risk of interspecies transmission

- unusual presentation of an hepatic hydatid cyst: a 71-year-old woman presented to hospital in Italy with a 1 week history of worsening severe burning sensation in the right chest wall and back. She also had abdominal discomfort, flu-like symptoms, and generalised bony pains. An abdominal CT scan showed a ruptured cystic lesion in the right lobe of the liver. Serology for Echinococcus granulosus was positive. No history of major trauma was reported, and thus a diagnosis of spontaneous rupture of hepatic hydatid cyst was made. The cyst was surgically removed and the patient made a full recovery

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