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

*Incident assessment:

<table>
<thead>
<tr>
<th>Deteriorating</th>
<th>No Change</th>
<th>Improving</th>
<th>Undetermined</th>
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<tr>
<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

As the Ebola response entered its seventh month, case incidence decreased slightly in February but the outbreak continued to prove challenging as ongoing security incidents and community mistrust hampered response efforts. Although the outbreak remains localised to North Kivu and Ituri provinces [map], as of 01 March, a total of 890 confirmed and probable cases have been reported across 19 health zones. This is an increase of 110 confirmed cases in the past month, compared to 155 in January. Eleven new probable cases were added in February, all historical deaths that occurred between November and December 2018. Overall, 69 health workers have been infected to date. Butembo and Katwa are the main hot spots of the outbreak. A high proportion of community deaths, delays in case detection, frequent local travel among many cases and relatively high proportion of new cases from unknown contacts remain a risk for further spread.

The response was once again severely impacted by community resistance and attacks by armed groups. In Vuhovi, there was a decline in contact follow-up after a nurse was abducted and killed by unknown assailants. Two Ebola Treatment Centres (ETCs) manned by MSF in Katwa and Butembo were attacked and burnt down during the last week of February. The ETCs were rendered non-functional and some confirmed cases who were being treated at the ETCs fled into the community. After a few days, all patients had been found and relocated to a transit centre in Katwa. In response, MSF and ALIMA suspended medical activities in the two affected areas pending a thorough analysis of the risks associated with continuing to provide medical care. The Butembo ETC reopened on 2 March and is being run by the Ministry of Health in collaboration with WHO and UNICEF.

Ongoing vaccination of healthcare and frontline workers in Uganda and South Sudan continues, and vaccines have been received in Rwanda. The DRC announced plans to include pregnant and lactating women in the current Ebola vaccine protocol, a move which was supported by WHO’s Strategic Advisory Group of Experts (SAGE) on Immunization. Since the vaccination campaign began in August, 84,948 people have been vaccinated.
### Other incidents of interest

- **China** reported 1 new case of avian influenza H9N2 from **Yunnan Province** with illness onset in January. This is the second case reported in 2019 and brings the total number of cases reported in China since 2015 to 25.

- one confirmed and 4 suspected cases of **Nipah virus** were reported in Thakurgaon district, **Bangladesh** in February. Investigations are ongoing into the source of the outbreak. Bangladesh lies within the known risk area for Nipah virus and has reported 303 cases since 2001.

- for the second year in a row, **global cases of circulating vaccine derived poliovirus (cVDPV) exceeded those of wild poliovirus** in 2018. Six countries reported cases of cVDPV with onset dates in 2018, including **Indonesia** where a **single case of acute flaccid paralysis and a community contact** were recently found to be positive for cVDPV type 1. The case, whose onset was in November 2018, and the community contact were both in Papua province. Even though the province shares a border with Papua New Guinea, which is currently experiencing a cVDPV1 outbreak, they are not related. Vaccine coverage remains low at subnational levels (72% in Papua province).

- PAHO issued an alert recommending countries in **Latin America and the Caribbean** prepare for possible dengue fever outbreaks. Outbreaks of dengue fever are cyclical and so far in 2019, there has been a significant increase in reported cases compared to the **same period in 2018. Jamaica** has already declared an outbreak as the number of cases in December 2018 surpassed the epidemic threshold.

- the hantavirus outbreak reported in Chubut Province, **Argentina** in December appears to be controlled. As of **21 February**, a total of 34 cases have been reported, an increase of only 3 confirmed cases in the past month. Genomic sequencing confirmed **Andes virus as the cause**.

- following a significant increase in Lassa fever cases in **Nigeria** in January, the numbers started to decline in February. As of **24 February**, a total of 1,249 suspected cases, including 381 confirmed, have been reported since the beginning of the year across 20 states. The outbreak peaked in **weeks 3 and 4**. It is hypothesised that some of the increase in reported cases over the past 2 years is due to the implementation of intensified outbreak response, additional diagnostic support and increased surveillance.

- the Rift Valley fever outbreak reported in **Mayotte** in January is ongoing. As of **01 March**, a total of 82 human cases have been reported, mainly from the center and north-west of the island. Outbreaks have also been reported among animals leading to a **temporary ban on the sale of raw milk**.

- **Brazil** is currently experiencing its seasonal period for yellow fever. While the number of reported cases is significantly less than the same time period last year, the virus appears to be progressing towards the Southeast and South regions of the country into areas with low population immunity.

### Middle East Respiratory Syndrome (MERS)

- **eight more laboratory confirmed MERS cases** associated with two clusters and suspected nosocomial spread were reported in **Oman** in February, bringing the total in 2019 to 13.

- a large hospital-related MERS outbreak was reported from Wadi al-Dawasir, **Saudi Arabia**. As of **01 March**, 51 cases have been reported since the end of January. Nosocomial transmission occurred between the index case and health care workers and patients. Nine health care workers have been affected.
Publications of interest

- in the UK, an increase in acute flaccid paralysis (AFP) detections was observed towards the end of 2018. The temporal pattern of cases by week of onset corresponded with the overall number of EV-D68 (previously hypothesised to be a cause of AFM outbreaks) detections by week of sampling. Out of 40 clinical cases of AFP, EV-D68 RNA was detected in respiratory tract samples from 9 (22.5%) cases. Similar results have been reported from previous research conducted in the US.

- Borrelia crocidurae is a common cause of tick-borne relapsing fever in West Africa, and can be transmitted to humans via ticks. The first autochthonous case of B. crocidurae infection in Europe was reported from Italy in a patient with no recent travel history or tick bite. The patient was admitted to hospital with a ten-day history of headache, vertical diplopia and fever. Following an MRI, a diagnosis of meningitis with cranial polyneuritis and cavernous sinus thrombosis was made and CSF samples tested positive for B. crocidurae. Although the patient was a farm labourer, a clear route of exposure was not found.

- Tularemia is a zoonotic disease caused by the bacterium Francisella tularensis. Humans can become infected through tick and deerfly bites, handling infected animal tissue, ingesting contaminated water or breathing in infective materials. Clear human to human transmission has rarely been documented. The first case of human-to-human transmission of tularemia by solid organ transplantation was reported from Florida in 2017. Septic shock was reported in 3 patients who between them received 2 kidneys and a heart from a common donor less than 5 days after transplantation. Tularemia was confirmed in the donor and both kidney recipients. Two rabbit carcasses near the donor’s residence tested positive by PCR. Although the donor died of an unknown febrile illness, tests are not routinely performed on organ donors for F. tularensis so the infection went undetected.

- Over the past decade, Venezuela has experienced a severe humanitarian crisis that has impacted all facets of life. Accurate and reliable data about the public health situation in the country are rare. A review has been published in Lancet Infectious Diseases that provides a comprehensive overview of the growing vector-borne disease epidemics in the country and the ongoing spillover to neighbouring countries that present a threat to the whole region.

- A literature review of Nipah virus epidemiology, diagnosis and control strategies was published in Epidemiology and Infection.

- Between February and April 2018, the first three highly drug resistant Neisseria gonorrhoeae (NG) isolates were reported from two countries, with epidemiological links to Asia. Phylogenetic analyses demonstrated that the isolates are tightly genetically clustered and distinct from other globally distributed NG sequences. The identification of the 3 cases within such a short time period suggests that the clone is circulating in Asia and likely present elsewhere but undetected due to lack of testing and surveillance.

- Following detection of variegated squirrel bornavirus 1 (VSBV-1) in fatal encephalitis cases among exotic squirrel breeders and a zoo animal caretaker in Germany, a retrospective trace-back and sero-epidemiological investigation was conducted among holdings with VSBV-1 infected squirrels. Of 49 exotic squirrel breeders and zoo animal caretakers tested, only one squirrel breeder was seropositive. Two possible fatal cases among squirrel breeders were also identified, that had occurred in 2005 and 2006. The low seropositivity rate suggests either rarity of exposure, a high case fatality rate, or a combination of the two.
• **reporting delays and effective reproduction number for the current Ebola virus disease (EVD) outbreak**: a real-time analysis of the dynamics of the ongoing EVD outbreak in the DRC found that the average reporting delay declined over the course of the outbreak, from a mean of 17.4 weeks in May 2018 (when the first case is suspected to have occurred) to 2.2 weeks in September 2018, but fluctuations are expected to occur due to the unpredictable security situation in the area. The outbreak displayed two waves, the first between 20 July and 13 August, and the second started on 24 September. The trend in daily $R_0$ has remained relatively stable around 0.9

• the European Union **summary report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2017** was published by ECDC and EFSA

• a supplement on **diagnostic preparedness for WHO Blueprint pathogens** has been published in BMJ Global Health. It details the specific diagnostic challenges presented by priority pathogens that are most likely to cause future epidemics

### Novel agents, rare pathogens and disorders

• dirofilariasis is a mosquito-borne parasitic worm infection caused by species of *Dirofilaria*. It is zoonotic, with *D. immitis* and *D. repens* causing most human infections. *D. immitis* mainly causes benign pulmonary nodules, while *D. repens* causes subcutaneous nodules and interocular infections. A rare case of *D. repens infection mimicking lung melanoma metastasis* was reported in Italy, in an otherwise well woman with a history of cutaneous melanoma. She was admitted to hospital following a scan that showed pulmonary nodules. Suspecting that the melanoma had metastasised to the lungs, a right lower lobe resection was conducted and revealed a nodular lesion with areas of necrosis. *Dirofilaria repens* worms were found embedded in the necrotic material. Even though the patient reported frequent travel to north-east Italy and a rural area in Bosnia Herzegovina, both known to be endemic, and recalled being frequently bitten by mosquitoes, the infection was initially misdiagnosed highlighting the lack of awareness by clinicians.