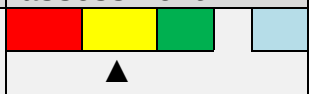
HM Government

**Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance. November 2018**

***Incident assessment:**

| Deteriorating | No Change | Improving | Undetermined |
|---|---|---|---|
| Incident is deteriorating with increased implications for public health | Update does not alter current assessment of public health implications | Incident is improving with decreasing implications for public health | Insufficient information available to determine potential public health implications |

| Notable incidents of public health significance | Incident assessment* |
|---|---|
| **Ebola virus disease (EVD), Democratic Republic of Congo** |  |

**North-Kivu and Ituri provinces, eastern DRC**

Case incidence continued to increase in November and the outbreak is now the second largest recorded. As of 1 December, a total of 440 confirmed and probable cases have been reported, including 392 confirmed cases, across 14 health zones in North Kivu and Ituri provinces [map]. This is an increase of 142 confirmed cases in the past month, compared to 121 in October. Beni, Butembo, Kalunguta and Katwa remain the principle hotspots of transmission. Based on the outbreak's current trajectory, WHO officials expect it to last until mid-2019.

Three new health zones reported cases in November: Mutwanga (health zone in North Kivu that borders Uganda), Kyondo and Musienene (previously reported a probable case). A large proportion of cases continue to be reported among those who were not previously registered as contacts. Health centres were identified as a source of disease transmission, primarily through the use of injectable medications.

The EVD response was again disrupted by community resistance and attacks by armed groups. On 16 November, an armed group attacked a MONUSCO base in Beni, close to residences of UN Ebola responders. Response activities were temporarily suspended and some responders were evacuated to Goma for psychosocial evaluation.

A randomised clinical trial comparing three different antibody treatments and an antiviral drug was approved and began at the end of November. These have been in compassionate use since the start of the outbreak, but they will now be used in under clinical trial conditions to allow for robust comparison and evidence based conclusions as to efficacy.

North Kivu is also experiencing a large malaria outbreak. This is affecting the EVD response with up to 50% of people screened in EVD treatment centres have been found to only have malaria. A mass campaign was therefore launched in Beni to reach up to 450,000 people with anti-malarial drugs and insecticide-treated mosquito nets. While no confirmed cases in neighbouring countries have been reported so far, Uganda began vaccinating frontline health workers in high-risk districts in preparation.

**Human rabies in the UK**

An imported human case of rabies was reported in England in a person who had been bitten by a cat during a trip to Morocco. This was the first UK case since 2012, and the sixth since 2000; all followed animal exposures overseas. Although there has never been a laboratory-documented case of human-to-human transmission of rabies, other than a small number of cases resulting from organ or tissue transplant, as a precautionary measure, health workers and close contacts were assessed and offered vaccination when necessary. Guidance on rabies risk worldwide was reiterated for travellers.

**Other incidents of interest**

- **China** reported one human case of avian influenza H5N6 in Jiangsu province. In 2018, China has reported 5 human cases, bringing the total reported since 2014 to 23
- the cholera outbreak in **Yemen** appears to have stabilised, though case numbers are still high. 42,723 cases were reported in November, a slight decrease from October. The total for 2018 is 304,077 cases, including 389 deaths, in 22 of 23 governorates.
- dengue in **Europe**: France and Spain continued to report locally-acquired cases of dengue in November. Catalonia, **Spain** reported its first confirmed case in a person in Barcelona with no recent travel history. Since October, Spain has reported a total of 6 confirmed cases. **France** reported one new case in Nimes, Occitanie region, bringing the total number in 2018 to 5
- one confirmed case of locally-acquired dengue infection was reported from Miami-Dade county, Florida, **USA** in November. Florida last reported locally-acquired cases of dengue in 2016
- **Madagascar** is experiencing concurrent outbreaks of plague and measles. The plague season began in early November and as of 18 November, a total of 46 confirmed cases have been reported, including 10 pneumonic, from 13 districts across the country. A measles outbreak began in early October in Antananarivo, the capital, and has since spread to 17 regions. As of 26 November, 4,104 cases have been reported
- a case of yellow fever was imported into the **Netherlands**. The patient was unvaccinated and had recently travelled to The Gambia and Senegal. Both countries fall within the yellow fever belt in Africa and last reported cases in 2012 and 2015 respectively
- The 19th meeting of the Emergency Committee under IHR 2005 took place in November. The Committee agreed that the risk of international spread of poliovirus remains a Public Health Emergency of International Concern (PHEIC) and recommended the extension of revised Temporary Recommendations for a further three months

Wild and circulating vaccine-derived polioviruses (cVDPV)

- **Afghanistan** reported its 20th case of wild poliovirus in 2018, the highest number since 2015; 14 cases were reported in 2017 and 12 in 2016.
- **Nigeria** continues to be affected by outbreaks of cVDPV2, with 8 cases in the past month. As of 27 November, a total of 27 cases have been reported across the country. **Niger** reported 2 new cases of cVDPV2 genetically linked to cases in Nigeria, bringing the total in Niger to 8
- **Papua New Guinea** continued to report cases of cVDPV1 with 3 in the past month. As of 27 November, 25 cases have been reported from 7 provinces.

**Publications of interest**

- acute flaccid myelitis (AFM): every two years since 2014, the US has observed increased reports of AFM in children. So far in 2018, 80 cases have been classified on clinical criteria as confirmed, representing a threefold increase compared with the same period in 2017. A definitive cause has yet to be determined. Specimens from 38 patients were positive on viral PCR, including 14 (37%) for enterovirus (EV) D68 (previously hypothesised to be a cause of AFM outbreaks), 11 (29%) for EV-A71 and 13 (34%) for other viruses.
- In the **UK,** an increase in EV-D68 detections has also been observed and a risk assessment was published
- *Angiostronglyus cantonensis* is a parasitic nematode that causes eosinophilic meningitis in humans, though a wider spectrum of CNS involvement is being increasingly reported. A severe case of CNS angiostrongyliasis was reported in a US marine based in Japan who developed prolonged neurological sequelae
- further evidence of Ebola virus infection associated with transmission from survivors was reported. Thirteen possible transmission events related to virus persistence were identified in the late stages of the West Africa outbreak. Five were considered sexual transmission but for 8, the route could not be established. Implications for future EVD outbreak responses, particularly after initial control is achieved, include support to survivors and continuing vigilance for cases
- canine hepatozoonosis is a tick-borne disease caused by the parasite *Hepatozoon canis.* It is usually transmitted by *Rhipicephalus sanguineus* ticks, which are widespread in the Mediterranean. Three cases have been reported for the first time in dogs imported into the UK. All were initially diagnosed on blood smears and confirmed by PCR. These cases further highlight the ongoing risk of introduction of non-endemic diseases
- the second detection of Lleida bat lyssavirus (LLEBV) in Europe was reported in France in 2017 in a Schreiber's bent-winged bat; the first occurred in the same bat species in Spain in 2011. Genetic sequencing determined it was 99.7% similar to the Spanish LLEBV strain
- the WHO World Malaria Report 2018 shows that while there were pockets of progress, for the first time reductions in incidence have stalled globally. In 2017, approximately 70% of all malaria cases and deaths were concentrated in 11 countries; 10 of which were in Africa and experienced an increase in cases compared to 2016. Amongst other challenges, the continued emergence of resistance threatens future progress
- a review of the history of monkeypox outbreaks in Africa and the US and possible underlying factors that have led to a recent increase in cases, highlights the many gaps in knowledge
- pneumonic plague transmission: although plague is endemic in Madagascar, in 2017 there was an unusually large and widespread outbreak with ~2,500 cases. In contrast with previous years, the majority were pneumonic cases. Given the unusual size and spread of the outbreak, the rate of transmission and effect of control measures were assessed. Mean $R_0$ was 2.4 (range 1.6 - 3.6), consistent with observed high prevalence of pneumonic disease and high population density in affected cities. Use of established control measures were shown to correspond with declines in transmission
- a new polio vaccine, thermostable lyophilised Sabin inactivated poliovirus vaccine, has been developed that can be stored without refrigeration and reconstituted at the time of use. Although only studied in mice so far, this vaccine could potentially increase the feasibility of conducting vaccination campaigns in remote locations and speed up the process of eradication

- long-term protection after fractional-dose yellow fever vaccination: in a 10-year follow-up study, 39/40 (98%) participants displayed protective levels of neutralising antibodies more than 10 years after receiving a fractional dose of the vaccine compared with 34/35 (97%) participants who received the standard dose, indicating that booster doses are not required for long term protection
- a case series of 24 infants with hydrocephalus and evidence of previous Zika virus infection was published in JAMA Neurology. This is the first time hydrocephalus has been described in association with congenital Zika virus syndrome
- a description of the UK's system for aeromedical transfer of patients with possible or confirmed high consequence infectious diseases was published in EID
- ECDC published its Annual Epidemiological Report (2017) for communicable disease threats to public health in the European Union

**Novel agents, rare pathogens and disorders**

- *Haycocknema perplexum* is a rare, "enigmatic nematode" recognised in Tasmania and Australia as a cause of myositis in humans. The exact mode of transmission remains unknown, but hypotheses include the consumption of bush meat, contact with wildlife and possible arthropod transmission. A recent case in Australia was reported in a recreational hunter who had consumed bush meat with a 2-year history of progressive weakness and wasting in his left lower limb. As clinical and laboratory assessments were inconclusive, diagnosis was confirmed by PCR. Albendazole treatment was successful
- hepatitis E viruses infecting humans have previously all belonged to the species Orthohepevirus A. The first human infection with Orthohepevirus C (HEV-C), which circulates in rats, has been reported. A cohort study found 1 transplant patient (out of 52 with persistent hepatitis) positive for HEV-C. Viral RNA was detected in multiple specimens and infection manifested as persistent hepatitis. A second case in 2017, also in an immunocompromised person, was recently reported by Hong Kong Centers for Health Protection.
- *Spiroplasma apis* is a honeybee pathogen recognised very rarely as infecting humans. Disseminated *S. apis* infection was reported in an immunocompromised patient in France. Multiple joints were affected, and both blood and joint fluids were positive on culture for *S. apis*. Previous cases did not report any history of insect bites or stings, but this patient reported multiple stings by a flying insect similar to a hornet some 6 months prior to onset.

This document has been produced by Public Health England on behalf of the Human Animal Infections and Risk Surveillance group. For more information or to sign up to the distribution list, please contact EpiIntel@phe.gov.uk