



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

**\*Incident assessment:**

<b>Deteriorating</b>	<b>No Change</b>	<b>Improving</b>	<b>Undetermined</b>
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*
<b>Ebola virus disease (EVD), Democratic Republic of Congo</b>	

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

The Ebola outbreak in DRC has been ongoing for over 4 months and case incidence continued to increase in December. As of [01 January](#), a total of 608 confirmed and probable cases have been reported, including 560 confirmed across 16 health zones in North Kivu and Ituri provinces [\[map\]](#). This is an increase of 168 confirmed cases in the past month, compared to 142 in November. In the past 21 days, confirmed cases were reported from [10 of the 16 affected health zones](#), with Beni, Butembo, Katwa, Komanda, Mabalako and Oicha the main hot spots.

Beni has experienced a general decline in weekly incidence since late October, while the outbreak has intensified in Butembo and Katwa. Two new health zones, [Nyankunde](#) (Ituri) and [Biena](#) (North Kivu), reported confirmed cases linked to other affected health zones, highlighting the continued risk of spread. In addition, four zones (Mabalako, Mandima, Komanda and Musienene) each reported new cases more than 21 days after their last occurrence. The majority of cases continue to be reported among unknown contacts.

The EVD response was again disrupted by [community resistance](#) and attacks by armed groups. The [security situation deteriorated rapidly](#) towards the end of December when the DRC [electoral commission suspended national elections in Beni and Butembo](#), citing the Ebola outbreak. This led to community demonstrations where [protestors vandalised and burned health facilities](#) and called for a “ville morte”. As a result, response activities in Beni and Butembo were severely disrupted for several days. Although most have since resumed, even short disturbances can result in increased transmission, as demonstrated previously in this outbreak. [Oxfam](#) and [IRC](#) have temporarily suspended response operations until the situation is stable.

Since the vaccination campaign began in August, [54,153 people have been vaccinated](#). Discussions are ongoing between WHO, GAVI and Merck, manufacturer of the current Ebola vaccine, to [reassess the size of the global stockpile](#) for future use. The changing nature of EVD means that increasingly there are outbreaks occurring in big cities with highly mobile populations, thus large scale vaccination campaigns may become the norm.

Measles and Plague, Madagascar	
<p><b>Measles</b></p> <p>The ongoing measles outbreak increased significantly in both case numbers and geographic spread in early December, with some slowing of weekly incidence evident later in the month. As <a href="#">of 24 December</a>, a total of 16,430 suspected cases have been reported in 48 districts, an increase of 12,326 in one month. Over 10,000 of these are epidemiologically linked and 325 were laboratory confirmed. The most affected district is Antananarivo, the capital.</p> <p>The outbreak is attributed to a <a href="#">decrease in population immunity since 2014 to below 75%</a>. An initial immunisation campaign took place in early November, and will be expanded to include children aged 9 months to 10 years in 25 of the most at risk districts in January.</p> <p><b>Plague</b></p> <p>The plague season is underway, but with lower incidence and severity than 2017. As of <a href="#">27 December</a>, a total of 65 confirmed cases have been reported across 24 districts, an increase of 19 cases in the past month. Of these, 11 were pneumonic. Nineteen deaths have been reported, including 10 among pneumonic cases.</p>	
<p><b>Other incidents of interest</b></p> <ul style="list-style-type: none"> <li>• <b>China</b> reported three new cases of avian influenza H9N2 in December, from <a href="#">Guangdong</a> (2) and <a href="#">Guangxi</a> (1) provinces with illness onset ranging from October to December. These bring the total number of cases reported in China in 2018 to 6</li> <li>• for the first time, <a href="#">Marburg virus</a> was discovered in 5 Egyptian rousette fruit bats in <b>Sierra Leone</b>. Positive bats were detected in separate locations. Samples from 4 of the 5 positive bats contained multiple genetically diverse strains, suggesting that Marburg virus has been present in the bat colonies for many years</li> <li>• <b>Pakistan</b> is experiencing an ongoing outbreak of <a href="#">extensively drug resistant (XDR) typhoid fever</a> that began in 2016. As of <a href="#">9 December</a>, a total of 5,274 XDR cases have been reported since November 2016, representing 64% of all typhoid cases. The majority were reported from Karachi (69%) and Hyderabad district (27%). Globally, the risk is considered low, however the potential for travellers to facilitate spread of the <a href="#">H58 resistant clone</a> cannot be excluded as travel related cases have already been documented</li> <li>• the <b>UK</b> continues to experience an <a href="#">increase in reported cases of acute flaccid paralysis</a> (AFP). 28 cases have been reported in England, mostly in children. So far, 12 cases were associated with enterovirus-D68 infection. Investigations are ongoing and <a href="#">guidance for health professionals</a> is available</li> </ul> <p><u>Circulating vaccine-derived poliovirus (cVDPV)</u></p> <ul style="list-style-type: none"> <li>• <b>Nigeria</b> continues to be affected by outbreaks of cVDPV2, with 6 cases in the past month. As of <a href="#">26 December</a>, a total of 33 cases have been reported in 2018.</li> <li>• <b>Niger</b> reported <a href="#">1 new case in Diffa province</a> linked with the outbreak in Nigeria, bringing the total reported in 2018 to 9</li> <li>• <b>Papua New Guinea</b> reported 1 new case of cVDPV1 in the past month. As of <a href="#">18 December</a>, 26 cases have been reported from 7 provinces</li> <li>• <b>DRC</b> reported 2 new cases of cVDPV2 in the past month in Mufunga-Sampwe district, Haut Katanga province. This is the fourth distinct emergence of cVDPV2 to affect the country. As of <a href="#">18 December</a>, 20 cases have been reported across the country</li> <li>• the <a href="#">cVDPV2 outbreak detected in 2017 in Syria</a> was declared to be over. In total, 74 cases were reported, with the most recent paralysis onset in September 2017</li> </ul>	

## Publications of interest

- in summer 2017, the Lazio Region of Italy experienced a large chikungunya virus (CHIKV) outbreak with 436 confirmed cases. Genetic sequencing showed that the causative virus [clustered with novel CHIKVs of the Indian Ocean lineage](#) circulating in India and Pakistan, and was distinct from the virus responsible for the 2007 outbreak in Italy. The 2017 virus was able to sustain transmission in the local *Ae. albopictus* vector despite the absence of the [mutation E1 A226V](#), a finding which warrants further investigation of the role of other detected mutations
- [serious bacterial infections associated with contaminated stem cell products](#) were reported in 12 patients across three states in the USA. Patients had received injections or infusions of umbilical cord blood-derived stem cell products sourced from a single company, and used for unapproved conditions such as pain or orthopaedic complaints. Unopened vials were subsequently shown to contain the same Gram negative and Gram positive pathogens identified in patients. Investigations are ongoing to determine when the contamination occurred as the products had different cord-blood donors and processing dates. Umbilical cord blood cannot be decontaminated after collection as there is no validated process for sterilisation, so processing must be strictly controlled
- Hendra virus (HeV) and Nipah virus (NiV) are rare, emerging causes of severe and often fatal disease in humans. They were initially discovered in Australia and Asia respectively, and evidence of their presence in African fruit bats has previously been found. In Uganda, a study [assessed the potential for spillover into domestic animals](#). Sera from 661 pigs from farms across Uganda were tested for antibodies to both HeV and NiV, and 14 (2%) had IgG antibodies to at least one. Neutralising antibodies were not detected in any animal, and there was no evidence of clinical disease. The results suggest rare exposure to known henipaviruses or henipa-like virus, and a currently unknown risk of spillover into the human population
- first report of [Nipah virus persistence in semen](#): during the recent outbreak in India, sequential specimens from a survivor were collected up to 59 days post illness onset and tested by PCR for the presence of NiV RNA. Semen collected on days 16 and 26 were both positive, but subsequent samples were negative. Blood and urine samples were positive for a short window between days 6 to 9, but negative thereafter. Virus isolation was not attempted so it was not possible to determine the risk of sexual transmission
- severe fever with thrombocytopenia syndrome (SFTS) is an emerging tickborne disease with a high case fatality rate, reported from China, Japan and South Korea. Transmission normally occurs through an infected tick bite, though limited person to person spread through direct blood exposure has been reported. A [cluster of nosocomial SFTS through suspected aerosol transmission](#) was recently reported in China. Following the death of a confirmed case, 2 of 14 healthcare workers (HCW) with similar significant exposures were subsequently diagnosed with SFTS. The first had conducted endotracheal intubation on the index patient while wearing a fluid-shield mask and gloves, which did not protect conjunctiva or upper respiratory tract against aerosols. The second had handled the body of the index case after death without mask or gloves. Sequencing confirmed the virus in the first HCW was 100% identical to the index case. No virus was detected in the second HCW
- tularemia is an uncommon zoonosis caused by the bacterium *Francisella tularensis*. Transmission to humans usually occurs from a tick bite, ingestion, contact with an infected animal, or inhalation of contaminated aerosols. Dogs are rarely implicated. Of 745 human cases reviewed in the USA, [24 \(3.3%\) were classified as dog-related](#),

either through direct contact (facial or percutaneous), handling carcasses brought back by a dog, or exposure to ticks on a dog. Four patients had had face-to-face exposure to unwell dogs, and all then developed pneumonic tularemia

- [yellow fever has yet to emerge in the Pacific](#) despite the presence of an immunologically naïve population, widespread distribution of *Aedes aegypti* mosquitoes, a tropical climate and increased international tourism. Researchers hypothesise these factors make it only a matter of time until it emerges, thus there is a high need to develop appropriate prevention and vector control plans
- the [2017 Annual UK Zoonoses Report](#) was published. It includes feature articles highlighting human and animal incidents and issues of public health significance, as well as summaries of reported cases of zoonotic infection in humans and animals across the UK during 2017
- The European Union [summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017](#) was published by ECDC and EFSA

### **Novel agents, rare pathogens and disorders**

- [koala bite wound infections with a novel \*Lonepinella koalarum\*-like infection](#) were reported in Australia. *Lonepinella* are Gram negative coccobacilli in the family *Pasteurellaceae*. *L. koalarum* is present in koala faeces while *L. koalarum*-like strains have been found in koala gingiva. The three human patients identified had presented with clinically significant skin and soft tissue infection, requiring debridement but with no long term sequelae. Identification of the organisms was problematic and achieved with a combination of MALDI-TOF and genetic analysis
- the [first report of acute transverse myelitis associated with Zika virus infection](#) was reported in Brazil. The patient presented with generalised erythema, headache, conjunctival congestion and fever followed 10 days later by sudden onset of flaccid paralysis. Zika virus was detected by PCR in CSF samples. Serum autoantibodies against MOG, a transmembrane component of the myelin, were also detected in the CSF. This was postulated to suggest an autoimmune CNS demyelination triggered by Zika virus, rather than a direct viral effect. The patient recovered completely.

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](mailto:Epiintel@phe.gov.uk)

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