



### Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance. September 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*
<b>Ebola virus disease (EVD), Democratic Republic of Congo</b>	 ▲
<p><b>North-Kivu and Ituri provinces, eastern DRC</b></p> <p><u>01 October</u> 2018 marks two months since the declaration of the Ebola outbreak in eastern DRC, and since then there have been a total of 129 confirmed and 32 probable cases across ten health zones in the two affected provinces. 29 confirmed cases were reported in September. Since 08 August, over 13,000 people have been vaccinated.</p> <p>Béni is reporting an increasing number of all new cases, indicating <a href="#">ongoing active transmission</a>. Weekly case numbers <a href="#">appear to have stabilised</a> but should be interpreted with caution due to delays in case reporting and the ongoing security situation which limits contact tracing. All contacts of cases in the Masereka Health Zone have <a href="#">completed their 21-day monitoring period</a>. Tchomia Health Zone in Ituri Province was affected for the first time in September, with two confirmed cases. Both were linked to the ongoing transmission chain from Ndindi district, Béni. Tchomia <a href="#">[map]</a> is a town on the shores of Lake Albert on the Ugandan border approximately 200 kilometres north of Béni. An Ebola Treatment Centre and laboratory were subsequently constructed in Tchomia.</p> <p>Of continued concern is the detection of cases amongst individuals not known to be contacts, ongoing community resistance, fleeing of cases to 'red zones' (insecure and challenging locations where response activities are extremely difficult to carry out), and high-risk behaviours (eg unsafe burials, late presentation to treatment centres and hiding sick contacts). Community unrest and militia activity also continue to compromise the response. Field activities were temporarily suspended in Béni following increased rebel fighting. <a href="#">Although the response resumed after a few days</a> there were severe impacts with contact follow-up temporarily falling to 50% and a slowdown in active case-finding.</p> <p><a href="#">Alerts for suspected viral haemorrhagic fever cases</a> in other provinces of DRC and in neighbouring countries continue to be reported and rapidly investigated. So far, all have been negative. In preparation for any cases, <a href="#">Uganda has set up ETCs</a> in four high-risk districts and is preparing to launch a vaccination campaign.</p> <p>WHO has revised <a href="#">its risk assessment</a> to very high at the national and regional levels, remaining low globally. The risk for the UK population has not changed and is currently assessed as negligible-very low.</p>	

Monkeypox, UK and Nigeria	
<p><a href="#">Monkeypox</a> is a rare, zoonotic infection caused by an Orthopoxvirus found in West and Central Africa. Cases were first identified in DRC in the 1970s. During September, <a href="#">2 imported cases of monkeypox were diagnosed in England</a>. Both had recently been in Nigeria where they are believed to have contracted the infection. There was <a href="#">no UK epidemiological link between the 2 cases</a>. This was the first time monkeypox has been diagnosed in the UK, and the first cases reported outside Africa since the outbreak associated with <a href="#">imported African rodents in the United States in 2003</a>.</p> <p>A <a href="#">third case</a>, a healthcare worker involved in the care of the second case, was diagnosed later in the month. This is the first recognised case of person to person transmission outside Africa.</p> <p>There is no licensed vaccine specifically for use against monkeypox, but smallpox vaccines are believed to provide a degree of cross-protective immunity against other orthopoxviruses. Alongside active and passive monitoring of contacts, <a href="#">IMVANEX smallpox vaccine</a> is being offered for pre- and post-exposure prophylaxis.</p> <p><b>Nigeria</b> has been experiencing a large outbreak of monkeypox since September 2017. As of <a href="#">15 September</a>, a total of 269 cases, including 115 confirmed, have been reported from 27 states. Genetic sequencing suggests <a href="#">multiple sources of introduction</a>, and to date, no epidemiological links between cases in different states have been identified.</p>	
<p><b>Other incidents of interest</b></p>	
<ul style="list-style-type: none"> <li>• <b>China</b> reported one human case of <a href="#">avian influenza H5N6</a> in Guangdong. The patient had contact with live poultry before onset of symptoms. Since 2014, 21 human cases have been reported from China</li> <li>• one <a href="#">imported case of MERS</a> was reported in <b>South Korea</b>. The patient had recent travel to Kuwait, which had not reported a case since 2014. This is the first case of MERS imported into South Korea since 2015, when an imported case resulted in an <a href="#">outbreak of 186 cases</a></li> <li>• <b>Iran</b> has become the eighth country in the world to <a href="#">eliminate trachoma</a> as a public health problem</li> <li>• the increase in cases of West Nile virus infections in <b>Europe and neighbouring countries</b> reported in August continues. As of <a href="#">27 September</a>, 1,670 confirmed and probable human cases were reported, with Italy (495), Greece (261) and Serbia (320) reporting the majority of cases. The number of infections reported so far <a href="#">exceeds the total number of infections in the previous five years</a>. During the current transmission season, there have also been 201 outbreaks in horses, most in Italy (107), Hungary (78), and Greece (10). Following the detection in owls in August, Germany reported infection in a horse for the first time</li> </ul>	
<p><u>Circulating vaccine-derived poliovirus</u></p>	
<ul style="list-style-type: none"> <li>• <b>Papua New Guinea</b> continued to report cases of cVDPV1. As of <a href="#">25 September</a>, a total of 14 cases have been reported from 6 provinces, including <a href="#">Port Moresby</a>, the capital. A nationwide vaccination campaign is planned for October</li> <li>• <b>Nigeria</b> continues to be affected by two separate outbreaks of cVDPV2. So far, 11 cases of cVDPV2 have been reported across the country. <b>Niger</b> reported <a href="#">two cases of cVDVP2 that were genetically linked to a case</a> in Jigawa, Nigeria. An outbreak response is planned for Niger, including a vaccination campaign</li> <li>• <a href="#">Somalia</a> and <a href="#">DRC</a> continued to report cases and positive environmental samples in September</li> </ul>	

## Publications of interest

- *Bokeloh bat lyssavirus*, a member of the Rhabdoviridae family and one of the causative agents of bat rabies, was [reported in a Natterer's bat in Poland for the first time](#). Previously, it had only been detected in bats in Germany and France. Genetic sequencing revealed the closest homology with lineages detected in southern Germany
- [the first documented transmission of diphtheria in the UK for 30 years](#): Cutaneous diphtheria was diagnosed in a fully vaccinated office worker who returned from volunteering at an orphanage in Ghana. Toxigenic *Corynebacterium diphtheriae* was isolated from non-healing ulcers, and active contact tracing was undertaken. One of the close contacts was elderly and had an uncertain immunisation status. This contact's throat swab was positive for toxigenic *C. diphtheriae*. The isolates from both individuals were biovar mitis strains, and of the same novel sequence type. This incident highlights that cutaneous infection can occur in fully vaccinated individuals, and that such infections can transmit to individuals with an impaired or waning immune response
- vaccinia virus (VACV) is an Orthopoxvirus that is considered less virulent than other members of the genus, but can cause ulcerative lesions in humans. [Atypical VACV infection was reported in China](#) in 5 workers at a small-scale pharmaceutical plant. They had been grinding frozen skin from infected rabbits into powder without any protective equipment. They each presented to hospital 4-5 days later with fever, cough and shortness of breath, and 3 also had skin lesions. PCR was positive for Orthopoxvirus and VACV DNA. Lesions were present both in the skin and lungs, which had not been reported before, presumably as a result of both cutaneous and inhalation exposure
- on the 200<sup>th</sup> anniversary of the first recognised cholera pandemic in 1817, [2017 was a milestone year for cholera](#). Yemen became the first country on record to report over 1 million suspected cases in one year. Even excluding Yemen, 45% more cases were reported in 2017 than 2016. Violent conflict and infrastructure collapse, drought, famine and displaced populations perpetuated the spread of cholera in many areas. It is however acknowledged that the true global picture is not known due to variance and disincentives in reporting
- Nodding Syndrome is an epileptic syndrome of unknown aetiology affecting children in South Sudan, Tanzania and Uganda that results in neurological deterioration and death. A recent study of five fatal cases in Uganda suggests that [nodding disease is a tauopathy](#) caused by mis-folding of the tau protein in the frontal lobe of the brain
- [Salmonella contamination of feeder mice](#): outbreaks of salmonellosis, especially in children, have been linked to reptile contact and contaminated feeder mice. A recent study investigated the location of *Salmonella* contamination of frozen feeder mice obtained from a supplier involved in a 2016 UK outbreak. A total of 295 mice were tested, from all feeder mice size categories. *Salmonella* Enteritidis (PT8 and PT13) were isolated from 17/59 (28.8%) batches tested, and most positive mice had external rather than internal contamination. Fuzzies were more likely to be contaminated than other sizes. The high level of external contamination of the rodent carcasses is likely generated during the production process, and presents a risk to those handling this type of pet food at home
- following the 2014 Ebola outbreak in Boende Health Zone, DRC, a study was conducted to determine [seroprevalence in local healthcare workers](#). 565 HCWs (both formal and informal) were enrolled, and 234/565 (41.4%) were reactive to at least 1 of the four Ebola proteins tested. Only 16 (2.8%) had neutralising antibodies. None of the

participants reported any history of symptoms consistent with Ebola virus disease, however, the serological results indicate that exposure to an Ebola virus at some time was common

- a useful [review of monkeypox outbreaks and epidemiology](#) has been published. It pulls together both official and unofficial data on reported cases since 1970. Although there are large data gaps, it does appear that case numbers have been increasing over the last 5 decades. Possible explanations include declining population immunity following the end of routine smallpox vaccination, improved diagnostic testing and surveillance, and increased exposure to animal reservoir species

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

- *Balamuthia mandrillaris* is a free-living amoeba known to cause granulomatous amoebic encephalitis in humans. Only 200 cases of human infection have been reported worldwide. The [first case associated with nasal lavage](#) was reported from the United States. The patient used a saline irrigation with home filtered tap water to rid a chronic sinus infection. She subsequently developed a red raised rash on one side of her nose the cause of which was not diagnosed despite investigation. A year later, she developed seizures and a CT scan showed a 1.5cm ring-enhancing lesion in the right brain. Histological analysis of brain tissue revealed clear evidence of amoebic infection and PCR and IFA were both positive for *Balamuthia mandrillaris*. Despite aggressive anti-amoebic therapy, the patient continued to deteriorate and died

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