



Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance. December 2016

*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*
Avian influenza A(H5N8) – update	 ▲
<p>Outbreaks of highly pathogenic avian influenza A(H5N8) continue to be reported across Europe, Asia and west Africa. In the last month, there have been confirmed infections on a turkey farm in England, on a poultry farm in Wales, and several detections in wild birds in England, Wales and Scotland (latest information on UK detections and guidance). Given the extent of geographic spread of H5N8 it is expected that this virus will continue to pose a risk to the UK's poultry sector for a considerable time. No further evidence has emerged to change the perceived risk to human health from H5N8, thus the risk to public health remains very low. No human cases of H5N8 infection have been reported to date.</p>	
Cholera outbreaks, global update	 ▲
<ul style="list-style-type: none"> • Yemen update - the cholera outbreak which began in early October in Sana'a, the capital of Yemen, continues. As of 28 December, 163 confirmed and 12,733 suspected cases have been reported, an increase of 63 confirmed and 6,733 suspected cases in the last month. The geographical distribution continues to expand with cases having been reported in 14 of the 20 governorates • Haiti update - the cholera outbreak that followed Hurricane Matthew is ongoing, but at a lower rate in the worst affected areas following a successful vaccination campaign. As of 19 December, over 9,600 suspected cases have been reported, the majority in the worst affected south west of the country [map] • Ghana update - the cholera outbreak is slowing down in Cape Coast, a large city in the Central Region. Since the end of October 591 cases (no deaths) have been reported, an increase of 91 cases in the last month 	
Rift Valley fever, Niger - Update	 ▲
<p>The Rift Valley fever outbreak in Niger appears to continue. Since the end of August 2016, a total of 384 human cases including 33 deaths have been reported, an increase of 102 cases and one fatality in the last month. Out of 287 tested samples, only 14 have been confirmed as Rift Valley fever virus and the last confirmed positive case occurred on 25 October. Suspected cases were recently reported in new areas to the north and south</p>	

of Tchintabaraden, the original focus in the north of Tahoua Region [[map](#)]. Investigations into other possible aetiological agents are ongoing.

Zika virus outbreak and neurological disorders



Epidemiological update

- the latest WHO situation reports both globally and for the Americas can be found at the [WHO International](#) and [PAHO webpages](#) respectively
- USA update: transmission continues in Cameron County, Texas with six cases reported to date. In Florida, although there are no sites of ongoing active vector transmission, a small number of sporadic cases continue to be reported. Investigations into the source of these infections are ongoing. In both southern Texas and southern Florida, continued vector-borne Zika virus transmission remains possible as temperatures during the winter months are high enough to allow *Aedes* mosquito activity, but at a lower level than in warmer months

UK imported cases: A low number of cases continue to be diagnosed in UK travellers returning from areas with active Zika transmission. [As of 28 December 2016](#), 281 travel-associated cases have been diagnosed since 2015, an increase of 16 in the last month.

Other incidents of interest

- as of 21 December, a total of 19 wild polio virus type 1 (WPV1) cases have been reported in **Pakistan** in 2016; significantly lower than the [54 cases reported in 2015](#) and the lowest number of annual cases ever reported. [Genetically linked isolates of circulating vaccine-derived poliovirus type 2 \(cVDPV2\)](#) were detected in two routine environmental samples in Quetta, Balochistan at the end of December, with no associated cases of paralysis. A [5 day vaccination campaign](#) with the monovalent oral polio vaccine type 2 is planned for early January 2017
- since the beginning of December, an outbreak of undiagnosed morbidity characterised by fever, headache, myalgia, arthralgia and rashes has been reported in Karachi, **Pakistan**. As of 2 January 2017, more than 350 cases have been reported. Laboratory analysis has [identified chikungunya virus](#) to be present, although only a very small number of samples have been tested to date. While chikungunya virus is endemic in neighbouring countries, this is the first time it has been laboratory confirmed in Pakistan
- an outbreak of *Yersinia pestis* is currently reported in **Madagascar**, particularly in the southern region. Madagascar commonly reports plague outbreaks, but this outbreak is outside the usual plague risk area. As of 28 December, [62 suspected cases \(6 confirmed\)](#) and 26 deaths have been reported in two municipalities. The majority of cases are of the bubonic form. Recent bush fires, related to the persistent drought, are thought to have driven rodents carrying the disease into the affected villages
- [seven cases of yellow fever](#) have been reported from the Kasaji and Sandoa health zones (Lualaba province) in the **Democratic Republic of Congo** [[map](#)]. While it is likely these cases are the result of sylvatic (jungle) transmission, the possibility of an association with the recent Angolan-DRC outbreak has not yet been discounted. The last confirmed DRC case associated with the Angolan-DRC outbreak was diagnosed in mid-July 2016. Local health teams are monitoring the situation and collecting samples to identify any further cases.
- on 23 December, **Angola** [declared the end of their yellow fever epidemic](#), six months since confirmation of the last case. From December 2015 to June 2016, a total of 884 confirmed cases, 4,436 suspected cases and 381 deaths from yellow fever were reported in 16 of the 18 provinces, with Luanda (which contains the

capital), Benguela, Huambo and Huíla most affected [[map](#)]. A total of 18 million people (70% of the target population estimated at 25.7 million people) received yellow fever vaccine in response to the outbreak

Publications of interest

- China are currently experiencing their fourth annual epidemic of avian influenza A(H7N9). As of [3 January 2017](#), the WHO has been informed of 809 confirmed human cases since 2013, the vast majority in mainland China but with exported cases very occasionally reported. Most human cases have a recent history of close contact with infected poultry or their environments. Over the four years, the age, sex distribution and exposure history of cases have all been very similar ([analysis of the first three waves here](#)). [In the most recent epidemic](#), a greater proportion of cases were admitted to intensive care units and lived in rural areas. Continued geographical spread of the virus to new areas and a longer epidemic period has also been demonstrated. Reassuringly, the genetic markers of mammalian adaptation and antiviral resistance remained similar across each epidemic, suggesting no evidence of increased transmissibility of H7N9 virus from poultry or environmental exposures to humans, nor of sustained human-to-human transmission. PHE recently updated their H7N9 [risk assessment](#) with the risk to UK residents being maintained as very low.
- during the Ebola virus disease (EVD) outbreak in Guinea in August 2015, [a fatal infection was reported in a 9 month old infant](#) with no obvious epidemiological links to known cases or survivors. To investigate possible asymptomatic virus carriage in close contacts, body fluids from both parents were tested for Ebola virus. Maternal breast milk and a semen sample from the father tested positive via PCR. Sequencing showed that the viruses from the child and the breast milk were closely related and phylogenetic analysis showed the virus from the breast milk to be ancestral to that of the infant. Sequencing of virus from the semen sample indicated that that virus was not closely related to those detected in either the mother or child. Neither parent recalled any previous noticeable health episodes, providing further evidence to the possibility of undiagnosed asymptomatic or mild EVD cases acting as potential sources of virus transmission. This is the [second reported case](#) of Ebola virus transmission mostly likely from the breastmilk of an asymptomatic mother
- the final results of the ring vaccination cluster-randomised trial in Guinea (and two small areas in Sierra Leone) in 2015 to [assess the efficacy of the rVSV-ZEBOV vaccine in EVD prevention](#) have recently been published. The study involved vaccinating a 'ring' of all contacts and contacts of contacts of confirmed cases of EVD, either immediately or after 21 days post-randomisation. An interim analysis had suggested that immediate rVSV-ZEBOV offered very high protection, leading to the delayed-vaccination arm being discontinued. No cases of EVD occurred 10 days or more after randomisation among any contact in immediately vaccinated clusters compared with 16 cases in those in delayed clusters. Vaccine efficacy was 100% in both randomised and non-randomised clusters with no obvious safety concerns for adults and children. This study strongly suggests that the rVSV-ZEBOV vaccine was effective in protecting against EVD.
- in mid-December, researchers in the US and Brazil published initial results from their surveillance systems for pregnant women exposed to Zika virus infection. Although both studies aimed to assess the rate of negative outcomes in offspring of women who test positive for Zika virus during pregnancy, their inclusion criteria were different. The rates of adverse outcomes differed considerably but it is currently unclear what could be responsible.

- the [Brazilian study](#) which followed women who presented with a rash during pregnancy found adverse outcomes for live births in 46% of Zika virus-positive women versus 11.5% for Zika virus-negative women
- the [US study](#) which followed women with laboratory evidence of possible recent Zika virus infection found adverse outcomes of 6% in fetuses or infants from symptomatic or asymptomatic mothers
- a [recent study of symptomatic male travellers who returned to the UK](#) from Zika risk countries has shown that a substantial proportion of symptomatic men have detectable Zika virus RNA at high copy numbers in semen during early convalescence, suggesting high risk for sexual transmission during the first few weeks after infection. However, viral RNA clearance times were not consistent and could be prolonged, ranging from several weeks to months after recovery
- a recent modelling study has hypothesised that the [higher fatality rates of infectious diseases often seen in men](#) compared to women may be a result of differences in the transmission routes that the sexes provide, rather than a stronger immune response in women

Novel agents, rare pathogens and disorders

- a [rare human case of influenza A\(H7N2\)](#) has been diagnosed in a veterinarian in the US, the [first such case there since 2003](#). The case, who only suffered a mild illness, had close, prolonged, unprotected exposure to respiratory secretions of infected cats at an animal shelter in New York City. No other cases were identified in more than 350 individuals who were screened. This influenza strain was last detected in the US in poultry in 2002/2003 and this is the first report of transmission of H7N2 from cats to humans. The [risk of human infection from contact with an H7N2-infected person](#) is thought to be low. The risk posed by this virus to the public (people who have no contact with infected cats or an infected person) is thought to be very low
- a recent paper has documented [40 importation events of *Rhipicephalus sanguineus*](#) on recently travelled or imported dogs into the UK since 2012. Although current climatic conditions in the UK are unlikely to permit the survival of this species outdoors, indoor infestations can occur and this can present a risk of disease transmission within an infested property

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