Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance. April 2017

*Incident assessment:

<table>
<thead>
<tr>
<th>Deteriorating</th>
<th>No Change</th>
<th>Improving</th>
<th>Undetermined</th>
</tr>
</thead>
<tbody>
<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>Yellow fever, southeast Brazil</th>
<th>Incident assessment*</th>
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**Epidemiological update:** The yellow fever (YF) outbreaks in Brazil continue. As of 27 April, a total of 3,131 clinically compatible cases of YF have been reported, of which 715 have been confirmed and 1,589 discarded. This represents an increase of 1,144 suspected and 141 confirmed cases in the last month. A total of 392 deaths have been reported, 240 among confirmed cases. In the last month, one new state (Tocantins) has reported a single confirmed case, (retrospectively diagnosed). Although Tocantins was regarded as an area at risk of YF, the case was unvaccinated and died in January. This is the first YF death reported in Tocantins in 17 years and increases the number of states reporting confirmed cases to six (with Minas Gerais, Espírito Santo, São Paulo, Pará and Rio de Janeiro) [map]. In Minas Gerais, the last confirmed case reported symptom onset on 14 March 2017. In contrast to last month, Espírito Santo and Rio de Janeiro experienced a slight increase in reported case numbers. The last confirmed case in São Paulo experienced onset of symptoms on 06 April 2017. In Rio de Janeiro, one confirmed case was reported from Maricá. This area is approximately 30 miles from the city of Rio and the situation in the state is being closely monitored. The case is reported to have lived in a rural area of Maricá city (population less than 150,000).

In addition to vaccine distributed for routine vaccination across YF risk areas in Brazil, an additional 23.6 million extra doses have been sent to five states in response to their outbreaks. At the beginning of April, Brazil adopted the use of single dose vaccine following the recommendation by WHO, and the government also discussed the possibility of using fractional dosing in areas where there has been a dramatic increase in YF cases.

To date, Aedes aegypti has not been reported to have a role in transmission which remains sylvatic.

**Epizootic update:** A cumulative total of 3,467 non-human primate epizootics have been reported, of which 474 were confirmed as YF to date. While eight epizootics were confirmed in April, no epizootics were confirmed in new areas of Minas Gerais, Espírito Santo or Rio de Janeiro in the week leading up to 27 April. There remains the risk of spread to bordering neighbouring countries, especially those with a similar ecosystem.
The risk of yellow fever transmission in the EU remains low. Travel advice can be found on the NaTHNaC website.

Meningitis, Nigeria and Niger

The meningococcal meningitis outbreak continues to expand. Since December 2016, a total of 10,695 suspected cases and 919 deaths have been reported in Nigeria, 7,698 suspected cases in the last month. This increase has been largely attributed to increased response and active case finding in affected areas. The 6 most affected states are Zamfara, Katsina, Sokoto, Kebbi, Niger and Yobe [map]. While Neisseria meningitidis serotype C is the predominant strain throughout the country, the outbreak in Yobe is predominantly caused by serotype A. Weekly case numbers are showing some indications of slowing.

Even though Nigeria is within the meningitis belt and experiences cases every year, the scale of this outbreak has overstretched the government’s capacity to respond. There is a risk of further spread as the outbreak extends towards the north-eastern corner of Nigeria where there is currently a complex humanitarian situation. A large scale response involving international partners is underway, with 821,340 doses of meningitis C-containing vaccine already distributed to affected states. However, the quantity of vaccines received from the International Coordinating Group thus far has been insufficient to control the outbreak.

The successful distribution and high levels of coverage of the MenAfriVac vaccine led to sharp declines in Neisseria meningitidis type A outbreaks in Africa. However increases in outbreaks caused by other serotypes have subsequently occurred.

As of 14 April, Niger had reported 1,767 cases and 115 deaths in six districts since the beginning of the year. There are concerns of cross-border spread between Niger and Nigeria as the border is porous and the population is highly mobile. In Niger, cases are concentrated in the southern part of the country. The continued geographical expansion of the outbreak may indicate high susceptibility of the population.

The risk to vaccinated UK travellers is low as there are high levels of MenACWY vaccine coverage in the UK. Travel advice can be found on the NaTHNaC website.

Other incidents of interest

- Burundi officially declared a malaria epidemic in March, and 2,888,252 cases and 1,329 deaths had been reported between 01 January and 23 April. This represents more than a 50% increase in cases compared to the same time period in 2016. Health districts in the northern, central and eastern regions have been hardest hit.
- a case of monkeypox was reported from Pujehun district in southern Sierra Leone. The case experienced onset of symptoms on 14 March 2017, and laboratory tests confirmed monkeypox on 17 April 2017. Close contacts are being followed-up and no new cases have been identified to date. This is the third sporadic case of monkeypox reported from Sierra Leone; the first was reported in 1970 and the second in 2014.
- in early April, an occupational exposure to poliovirus in two vaccinated individuals in a vaccine production facility was reported from the Netherlands. Neither employee became symptomatic, but one tested positive for poliovirus on a screening throat swab. All household contacts of that person were followed-up and no further cases reported to date.
- a cluster of an undiagnosed morbidity was reported from Sinoe County, Liberia on 25 April. Symptoms included headaches, diarrhoea, vomiting and confusion. As of
29 April, there have been a total of 20 cases and 11 deaths in Sinoe and Montserrado Counties. The cases are reportedly associated with a funeral that occurred on the weekend of 23 April. Most of the cases are below the age of 21. Initial laboratory tests have ruled out Ebola, yellow fever and Lassa fever. Laboratory testing for further infectious and non-infectious causes are ongoing.

- **World Malaria Day** took place on 25 April, and WHO highlighted gaps in prevention, particularly in Africa. WHO announced a malaria vaccine (RTS,S) pilot programme will take place in Ghana, Kenya and Malawi in 2018. RTS,S is the first (and, to date, the only) vaccine to show a protective effect against malaria among young children in Phase 3 clinical trials.

### Publications of interest

- a study using next generation sequencing analysed the ‘oldest’ isolate of *Bacillus anthracis* from 1917, and determined that the spores were actually the result of an **accidental laboratory contamination** with the Ames reference strain in 1981

- *Brucella canis* was recently confirmed in the UK in a dog that had been imported from Romania. The dog had symptoms of diskospondylitis, and the organism was isolated from blood cultures. Not currently considered endemic in UK canids, there have been increasing reports from within Europe. Earlier in 2017 another dog, also imported from Romania, was found seropositive for *B. canis* infection. As for other *Brucella* species, it is potentially zoonotic although reported human cases are rare. Laboratory workers handling cultures are at potential risk

- *Brucella neotomae*, a species of **Brucella not considered to be zoonotic**, is commonly identified in wood rats. However, researchers in Costa Rica recently isolated the organism from cerebrospinal fluid of two men with symptoms compatible with neurobrucellosis. Epidemiological information as to exposure or source was lacking. Due to challenges in identification, the authors note the possibility of *B. neotomae* misdiagnosis as atypical *Brucella spp*

- following the detection of two autochthonous human cases of CCHF in Spain in 2016, the Spanish Ministry of Health conducted an investigation to determine the **presence of CCHF in ticks** in four communities near Madrid. The results indicated that the extent of CCHF circulation in ticks in Spain is higher than expected, however the risk of human infection is still considered to be low

- a themed issue “**The 2013–2016 West African Ebola epidemic: data, decision-making and disease control**” has been published by the Royal Society

### Novel agents, rare pathogens and disorders

- the first locally acquired case of *Angiostrongylus cantonensis* (the rat lungworm) eosinophilic meningitis has been reported from France. The parasite is endemic in Southeast Asia, the Pacific Islands, and the Caribbean. Human infection results from the ingestion of uncooked paratenic hosts (freshwater shrimps, crabs, and frogs); intermediate hosts (snails and slugs); or poorly cleaned contaminated vegetables that have been in contact with these hosts. A source of infection could not be identified for this case

- Togo has been successful in eliminating **lymphatic filariasis** and joins seven other countries around the world that have eliminated the disease. However, 33 other countries remain endemic

- a recent survey for hantavirus infection in field vole populations in Kielder Forest, Northumberland, UK detected a Tatenale virus-like lineage in 8/48 (17%) of voles. This hantavirus had been previously detected in a single field vole in 2013. These
data suggest the possibility that the virus is endemic in voles in northern England.

- an antibody study from Poland recently identified human infection with *Mycoplasma pulmonis*, a naturally occurring pathogen in rodents not thought to be zoonotic. Pet rat keepers and veterinarians exhibited the highest antibody titres though it is unknown if the presence of the bacterium in humans is associated with disease.

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