HM Government

Infectious disease surveillance and monitoring for animal and human health: summary of notable incidents of public health significance: November 2021

Contents

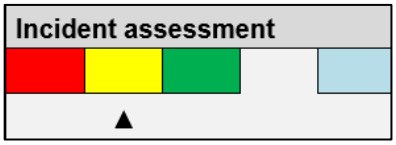
Incident assessment key

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

Coronavirus (COVID-19): Global summary

Incident assessment



No change: Update does not alter current assessment of public health implication.

Event information

By the end of November 2021, the World Health Organization (WHO) had reported over 261 million coronavirus (COVID-19) cases and over 5.21 million deaths globally. The weekly incidence increased during the first weeks of November, before plateauing in the final week. A total of 7.77 billion vaccine doses had been administered globally as of 30 November 2021. For further insight, please refer to the following reports:

- WHO's global weekly epidemiological updates
- ECDC's weekly surveillance summary for European countries
- UKHSA's national COVID-19 surveillance reports

Updates to note

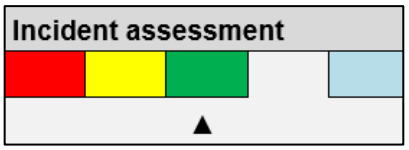
On 26 November 2021, the WHO designated the B.1.1.529 variant a variant of concern (VOC), named Omicron. The B.1.1.529 variant was first reported to WHO from South Africa on 24 November 2021. The variant has several mutations that may impact on how it behaves, including on how readily it transmits. Preliminary evidence suggests increased risk of reinfection compared to other VOCs.

The African Vaccine Acquisition Trust (AVAT), the Africa Centres for Disease Control and Prevention (Africa CDC) and COVAX published a joint statement outlining standards for vaccine donations. Over 90 million doses of COVID-19 vaccines have been donated to countries in Africa. However, most donations have been ad-hoc and have had short shelf lives. A sustainable supply of vaccines is required to enable long term planning.

Ebola virus disease, Democratic Republic of the Congo, North Kivu Province

Incident assessment

Improving: Incident is improving with decreasing implications for public health



Event information

On 8 October 2021, the Ministry of Health of the Democratic Republic of the Congo (DRC) announced that a new laboratory confirmed case of Ebola virus disease (EVD) had been detected in Butsili Health Area, Béni Health Zone in North Kivu Province.

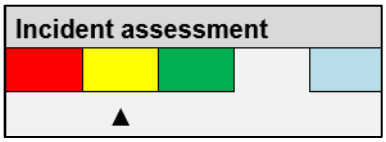
No new cases were reported in November. There has been a total of 8 confirmed (6 deaths) and 3 probable (all fatal) cases reported from 3 health areas in the Béni Health Zone. The last confirmed case was reported on 30 October 2021.

A 42-day countdown to declaration of the outbreak being over began on 3 November 2021, following the recovery and discharge of the last confirmed case.

As of 27 November 2021, all contacts had completed 21 days of follow-up. Since the beginning of the vaccination campaign, 696 individuals have been vaccinated, including 98 high-risk contacts.

Yellow fever, Ghana

Incident assessment



No change: Update does not alter current assessment of public health implication.

Event information

On 29 October 2021, health authorities in Ghana reported 8 cases of an undiagnosed illness, suspected to be yellow fever, among members of nomadic communities in the Savannah region. A yellow fever outbreak was confirmed after samples tested positive by polymerase chain reaction (PCR) at the Institute Pasteur Dakar in Senegal. Samples were negative for EVD, dengue and other haemorrhagic fevers they were tested for.

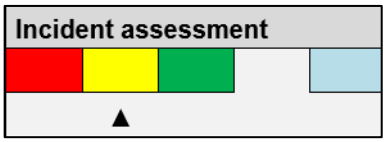
As of 27 November 2021, 202 suspected cases of yellow fever including 70 confirmed cases have been reported. There have been 35 deaths, resulting in a case fatality rate of 17%. A vaccination campaign began on 6 November, targeting 54,964 people in the affected areas.

Yellow fever is endemic in Ghana, however, no cases had been reported since 2019. Although there is high population immunity in the country (estimated to be 88% in 2020), there remains a risk of infection among pockets of the population that have lower vaccination rates. The current outbreak is predominantly affecting communities of nomadic settlers, for whom their vaccination status may be unclear.

The regions that have been affected by the yellow fever outbreak are Savannah, Upper West, Bono and Oti. Mole National Park, which is a wildlife sanctuary and popular tourist destination, is located in the Savannah region. The region also has porous borders with Côte d'Ivoire and Burkina Faso, which could facilitate the spread of yellow fever outside Ghana.

Wild polio and circulating vaccine derived polio virus, global update 2021 to date

Incident assessment



No change: Update does not alter current assessment of public health implication.

Event information

Wild polio virus

During November 2021, the Global Polio Eradication Initiative (GPEI) reported 2 confirmed cases of wild polio virus in Afghanistan. Overall, in 2021, 4 cases have been identified globally: 3 cases in Afghanistan and 1 in Pakistan.

Circulating vaccine derived polio virus (cVDPV)

No acute flaccid paralysis (AFP) cases of cVDPV type 1 (cVDPV1) were reported in November 2021. Overall, in 2021, 13 cases have been reported: 10 in Madagascar and 3 in Yemen.

As of 30 November, 452 AFP cases of cVDPV type 2 (cVDPV2) have been reported in 2021, across 20 countries, with 289 cases (63.9%) reported from Nigeria. In 2020, a total of 1,078 AFP cases of cVDPV2 were reported across 24 countries, with a much lower number reported from Nigeria (8 cases).

In Yemen, 2 cases of cVDPV2 were confirmed in November. The first case was identified in Taiz governorate, south-western Yemen, and the second in Marib governorate. The 2 areas are approximately 430km apart and do not share boarders. The 2 cVDPV2 isolates were found to be genetically linked. WHO report that this is a new emergence and the viruses identified are not related to other known cVDPV2 strains globally.

Other incidents of interest

Anthrax

In Argentina, a suspected case of cutaneous anthrax has been reported in a rural worker in the province of La Pampa.

In Kazakhstan, human cases of anthrax were reported in the areas of Kostanay (2 cases) and Shymkent (4 cases) during November 2021.

Zimbabwe has been experiencing an ongoing anthrax outbreak since September 2019. In the first week of November 2021, 9 new cases were reported in Mashonaland East Province and Mashonaland West Province. Cumulatively in 2021 to date, 212 cases have been reported with no deaths. This is fewer cases than in 2020, when there were 747 cases and 3 deaths reported.

Avian influenza A(H5N6), China

In November 2021, one case of avian influenza A(H5N6) was reported in mainland China, bringing the total number of cases reported so far in 2021 to 25. The case is a resident of Hunan province and had exposure to a live poultry market before symptom onset. From 2014 to date, a total of 51 human cases have been reported from mainland China.

Cholera

Between January and 21 November 2021, the DRC reported 7,736 suspected cholera cases including 148 deaths, resulting in a case fatality rate of 1.9%. During epidemiological week 46, 542 suspected cases were reported, which was an increase of 30.1% compared to the previous week (376 cases). Active outbreaks continue to be reported in the South-East (Tanganyika and Haut-Lomami Provinces) and the East (South Kivu Province) of the DRC. The WHO, with support from other partners, has intensified response efforts in the affected areas.

In Niger, a cholera epidemic was declared on the 9 August 2021. As of 28 November 2021, 5,587 cases have been reported, including 166 deaths (case fatality rate of 3.0%). The ongoing rainy season is thought to be contributing to the spread of cholera. There is considerable and regular population movement across the Niger-Nigeria border. The initial cholera cases in Maradi, southern Niger, were linked to the ongoing outbreak in northern Nigeria.

In Nigeria, 106,348 suspected cases of cholera, including 3,579 deaths (case fatality rate of 3.4%) have been reported in 2021, as of 28 November. Northern areas of Nigeria are the most affected. Together, the states of Bauchi (19,470 cases), Jigawa (15,141 cases) Kano (12,116 cases), and Zamfara (11,927 cases) account for 55% of cases reported nationally. Cholera is endemic in Nigeria and the country has been reporting an increase in cases since June 2021.

A cholera outbreak was declared in Togo on 7 November 2021. A total of 37 cases and 4 deaths had been reported as of 27 November 2021, resulting in a case fatality rate of 10.8%.

Crimean-Congo haemorrhagic fever (CCHF), South Africa

A case of CCHF was reported in South Africa, which dated back to September 2021. This was the first CCHF case reported in the country since February 2020.

Dengue

So far in 2021, 1,472,059 cases of dengue have been reported globally, with the highest number of cases reported from Brazil and India.

Brazil has recorded a downward trend in the number of dengue cases and deaths in 2021, compared to the previous year. Between January and November 2021, 494,992 cases were reported, which was 46.6% lower than the same period in 2020 (927,060 cases). The number of dengue associated deaths also decreased from 564 in 2020, to 212 so far in 2021.

While dengue is not uncommon in India, several states in northern and central India have seen a substantial rise in cases in 2021. Most notably, over 29,000 cases were reported in Uttar Pradesh by the end of November; 2 and a half times higher than in 2019 when the last spike in cases was reported by the state. India has experienced a prolonged monsoon season, resulting in a greater number of mosquito breeding sites. The Government have been initiating vector-control programmes, including the distribution of fogging machines to affected areas.

In Pakistan, the number of new dengue cases being reported appears to be reducing after reaching a peak in the week commencing 4 October 2021. As of 11 November 2021, 236,773 suspected cases and 197 associated deaths had been identified. Punjab is the worst affected province, accounting for 16,600 (43%) of 38,378 confirmed cases across the country. Case numbers are higher nationally in 2021, in comparison to recent years, with 24,547 cases reported in 2019 and 3,442 cases in 2020.

Lassa fever

In Liberia, between January and 21 November 2021, a total of 136 suspected cases were reported, of which 24 were confirmed. There were 15 deaths among the confirmed cases resulting in a case fatality rate of 63%.

Lassa fever cases continue to be reported in Nigeria, where it is endemic. As of 28 November 2021, 3,878 suspected and 430 confirmed cases have been reported this year. There have been 80 deaths reported among confirmed cases, resulting in a case fatality rate of 18.6%. Fewer cases have been reported compared to the same period in 2020 (6,333 suspected cases, 1,148 confirmed cases and 237 deaths among confirmed cases, with a case fatality rate of 20.6%).

Measles

On 12 November 2021, health officials declared a measles epidemic in the Maniema Province, DRC. The outbreak was declared following confirmatory testing of samples performed by the Institut National de Recherche Biomédicale. Since May 2021, the Kunda health zone has notified 458 measles cases, including 17 deaths. Provincial health officials have requested outbreak response support from the central government and humanitarian partners. In 2021, between epidemiological weeks 1 and 43, the DRC reported 45,903 suspected cases of measles, including 679 deaths (case fatality rate of 1.5%).

On 17 November 2021, the Ministry of Health and Medical Services of Fiji reported 2 measles cases in 2 villages of the Serua Province. Initial investigations suggest that disease transmission occurred at a funeral in a village located in the Serua / Namosi Province. The Ministry initiated response measures including case management, isolation of family members and contact tracing.

Middle East respiratory syndrome (MERS), UAE

One MERS case was reported from the United Arab Emirates in November 2021. The 60-year-old male, who owns a camel farm in Abu Dhabi, developed fever, sore throat, shortness of breath, and a runny nose on 3 November and presented to hospital on 5 November. He went onto make a full recovery. So far in 2021, there have been 15 cases of MERS-CoV identified globally. Of these cases, 13 were in Saudi Arabia and 2 in the United Arab Emirates.

Monkeypox

In the DRC, 2,807 cases including 75 deaths associated with monkeypox were reported between 01 January and 31 November 2021. This is lower than in 2020, when 6,257 suspected cases and 229 deaths were reported. Additionally, during November, media reported up to 199 cases of an undiagnosed disease with symptoms similar to monkeypox in Maniema Province. The number of cases and deaths reported varies. Samples have been taken to confirm the cause of the disease.

The United States of America (USA) reported an imported case of monkeypox from Nigeria in November 2021. The case became symptomatic with a rash whilst in Lagos, Nigeria. On 6 November, the case travelled from Nigeria to the USA via Turkey. Testing confirmed the infection as the West African clade of monkeypox; a strain that has re-emerged in Nigeria since 2017. This is the second report of a monkeypox case being imported from Nigeria to the USA. The first case was in July 2021.

Cases of monkeypox continue to be reported in Nigeria. In 2021 and as of 30 November, 93 suspected cases were reported; 31 of which were confirmed. No deaths have been reported. The number of confirmed cases reported is higher than in 2020 (8 confirmed cases). Since September 2017, 507 suspected cases of monkeypox have been reported from 32 states in Nigeria, with most confirmed cases being reported in the south of the country.

Plague, DRC

In Ituri Province, DRC, 121 suspected pneumonic plague cases and 13 deaths have been reported in 2021, as of 14 November. The number of suspected cases in Ituri is lower than last year, when 461 suspected cases and 31 deaths were reported in the province.

Venezuelan haemorrhagic fever, Venezuela

In November, media reported that 11 people had died as a result of Venezuelan haemorrhagic fever in Venezuela. Of the total number of deaths, 10 were from the state of Barinas and 1 was from Apure.

West Nile virus

In Europe, 157 cases of West Nile virus including 12 deaths were reported in 2021, as of 12 November. Greece (57), Italy (55) and Serbia (18) have reported the highest numbers of cases in Europe so far this year. In 2020, a total of 336 locally-acquired cases of West Nile virus were reported in Europe.

Cases of West Nile virus have continued to be reported in the USA during November 2021. As of 30 November, 2,550 cases were reported across 47 states. The state of Arizona has been the worst affected, reporting 1,286 cases. During 2020, a total of 664 cases were reported in the USA across 39 states.

Zika virus, India

So far in 2021, 231 cases of Zika virus disease and no deaths have been reported from 3 states in India. The majority of cases were reported from the state of Uttar Pradesh (147 cases), while Kerala has reported 83 cases and Maharashtra has reported one case.

Publications of interest

Anthrax

Authors analysed historical spatio-temporal patterns of livestock anthrax in Mongolia based on carcass burial sites to identify where risks may persist in the present day.

In Germany, researchers linked 2 bovine anthrax outbreaks 12-years apart to the same field, by showing samples were almost genetically identical. The most recent outbreak occurred after heavy rains.

Avian influenza

The first human infection of avian influenza A(H5N6) to occur outside of mainland China, was reported in a 5-year-old child in the Lao People's Democratic Republic during March 2021. Sengkeopraseuth and others presented a summary of the outbreak investigation surrounding the case.

In a recent study, domestic ferrets were trained to detect the compound acetoin, a potential marker of avian influenza infection, in the faeces of ducks, with the suggestion that the animals could be used as future biosensors in avian influenza surveillance programmes.

Chen and others characterised the genetic evolution of viruses before and after the introduction of the H7N9 H7-Re3 and H7N9 rLN79 influenza vaccines into China. Their results showed clear antigenic differences between current vaccines and the H7N9 influenza viruses that emerged after vaccine introduction, suggesting poor vaccine protection and possible vaccine induced mutations.

Chikungunya

Researchers have estimated that the epidemic potential for chikungunya virus (CHIKV) in mainland Australia will continue to rise towards 2029. As such, the authors state that a greater focus on vector-control and prevention measures should be implemented in at-risk locations, including the main urban centres of Northern Australia which could potentially sustain an epidemic of CHIKV.

COVID-19

Researchers in Israel analysed estimated vaccine effectiveness of a booster BNT162b2 mRNA COVID-19 vaccine as 93% (231 events for 2 doses versus 29 events for 3 doses; 95% CI 88–97) in 728,321 individuals that had either received a third vaccine or had received 2 doses at least 5 months prior.

Widespread human SARS-CoV-2 infections combined with human–wildlife interactions create the potential for reverse zoonosis from humans to wildlife. Prevalence of SARS-CoV-2 in wild white-tailed deer populations has been reported to be as high as 40% in some US States. In a

recent analysis, the geographical distribution and genetic clustering of deer and human lineages strongly suggested multiple zooanthroponotic spill over events and deer-to-deer transmission. These results emphasize the need for continued and expanded wildlife surveillance to determine how zoonotic pathogen spillback into novel wildlife reservoirs may affect pathogen adaptation, evolution, and transmission.

Ebola virus

An investigation into the safety, tolerability, and immunogenicity of the heterologous 2-dose Ebola vaccination regimen (Ad26.ZEBOV) showed that increasing the interval between vaccinations from 28 to 56 days improved the magnitude of humoral immune responses. Antibody levels persisted to at least 1 year, and Ad26.ZEBOV booster vaccination demonstrated the presence of vaccination-induced immune memory. The data supports the approval by the European Union for prophylaxis against Ebola virus disease in adults and children ≥1 year of age.

Lassa fever

A longitudinal, cohort study of Lassa fever survivors found that Lassa virus RNA can be shed in various body fluids after recovery from acute disease, and the persistence of infectious virus in seminal fluid implies a risk of sexual transmission of Lassa fever. The results of the study have implications for patient management and recommends that male survivors use safe sex practices for at least 1 year after discharge to prevent transmission.

Malaria

A phase 1 clinical trial performed in Mali, west Africa, found that a 3-dose regimen of *Plasmodium falciparum* sporozoite vaccine was safe, well tolerated, and conferred 51% vaccine efficacy against intense natural *P. falciparum* transmission; similar to 52% vaccine efficacy reported for a 5-dose regimen in a previous trial.

Marburg virus

Using real-time polymerase chain reaction and virus isolation, researchers tested fruit discarded by Egyptian rousette bats, which had been experimentally infected with Marburg virus. They found that Marburg virus RNA was repeatedly detected on fruit in the food bowls used by the infected bats and viable virus was recovered from inoculated fruit for up to 6 hours.

MERS

Researchers have assessed the safety and immunogenicity of the ChAdOx1 MERS vaccine in a phase 1b trial in healthy Middle Eastern adults. The one dose of ChAdOx1 MERS vaccine was well tolerated with no serious adverse event reported during the 6 months of follow-up, with data supporting the advancement of the ChAdOx1 MERS vaccine into phase 2 clinical evaluation.

Polio

Researchers found that defective viral genomes created by deleting the capsid-coding region of poliovirus elicited antiviral responses in mice against several RNA viruses including enteroviruses, influenza and SARS-CoV-2. Short- and long-term neutralising antibody protection in mice was noted.

Other publications of interest

In a recent study, researchers identified porcine deltacoronavirus strains in plasma samples of 3 Haitian children with acute undifferentiated febrile illness. These findings highlight the potential for evolutionary change and adaptation leading to human infections by coronaviruses outside of the previously recognized human-associated coronavirus groups, particularly in settings where there may be close human–animal contact.

A metagenomics sequencing study identified novel coronaviruses sharing 92.6% nucleotide identity with SARS-CoV-2 in *Rhinolophus shameli* bats sampled in Cambodia in 2010. The discovery of these viruses in a bat species outside of China indicates that SARS-CoV-2 related viruses have a much wider geographic distribution than previously reported and suggests that Southeast Asia represents a key area to consider for future surveillance of coronaviruses.

Researchers have demonstrated in a mouse model that the current attenuated yellow fever vaccine (YFV, 17DD) is also effective in immunizing against Zika virus infection, due to the similarity between the 2 viruses.

Novel agents, rare pathogens and disorders

Researchers in Argentina reported the first known case of hantavirus pulmonary syndrome caused by Alto Paraguay virus, and a novel orthohantavirus in *Scapteromys aquaticus* rodents. The findings implicate an epidemiological warning regarding these new orthohantaviruses circulating in Central Argentina as well as new rodent species that must be considered as hosts from now on.

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Published: December 2021
UKHSA publications gateway number: GOV-10928