HM Government

Infectious Disease Surveillance and Monitoring for Animal and Human Health: summary of notable incidents of public health significance: October 2021

Contents

Incident assessment key

Deteriorating	No change	Improving
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

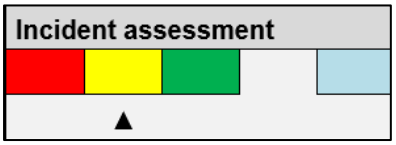
Undetermined
Insufficient information available to determine potential public health implications

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 October 2021, the World Health Organization (WHO) had reported over 246 million coronavirus (COVID-19) cases and over 4.99 million deaths globally. The number of new cases reported has been on an upwards trajectory throughout October after decreasing through September. A total of 6.89 billion vaccine doses had been administered globally as of 31 October 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

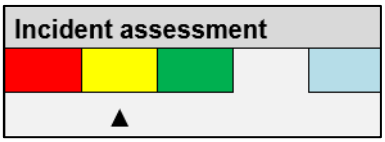
In October 2021, the WHO launched the Scientific Advisory Group for the Origins of Novel Pathogens, an expert group that will examine the origins of new pathogens of epidemic and pandemic potential, including SARS-CoV-2. The proposed members have wide-ranging expertise covering epidemiology, animal and public health.

Disparities in access to COVID-19 vaccines continue, with UNICEF reporting that G20 countries have received 15 times more doses per capita than countries in sub-Saharan Africa. According to projections from the WHO, only 5 of the 54 countries in Africa are on course to vaccinate 40% of their population before the end of 2021.

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

Incident assessment

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



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. Earlier this year, another EVD outbreak had affected North Kivu Province, which was declared over on 3 May 2021.

Initial findings from whole genome sequence analysis indicate that the current 2021 outbreak likely represents a new flare-up of a 2018 to 2020 EVD outbreak (in North Kivu and Ituri Provinces), initiated by transmission of Ebola virus from a persistently infected survivor or a survivor who experienced relapse.

In the current outbreak, the index case, a 3 year old male, developed symptoms in early October and died on 6 October 2021. This followed 3 deaths in a family from the same neighbourhood of the confirmed case (2 children and their father). These cases visited several health facilities, prior to their deaths between 14 and 29 September 2021, after developing symptoms consistent with EVD. Whilst these individuals were not tested for EVD, they were listed as probable cases after being epidemiologically linked to a second confirmed case (confirmed on 13 October), a 42 year old female relative of the first confirmed case, who died on the 14 October.

As of 31 October 2021:

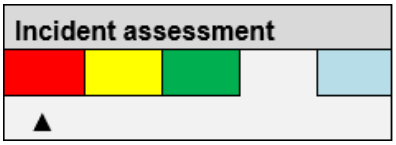
- a total of 8 confirmed (6 deaths) and 3 probable (3 deaths) EVD cases have been reported from 3 health areas of the Béni Health Zone
- the last confirmed case was reported on 30 October 2021
- 552 contacts had been listed, of which 448 (81.2%) are engaged in follow-up. Of the listed contacts, 63.8% have been vaccinated, either during previous EVD outbreaks or during the current outbreak
- since the vaccine campaign began, 394 people had been vaccinated using the Recombinant vesicular stomatitis virus–Zaire Ebola virus (rVSV-ZEBOV) vaccine, including 67 high risk contacts, 182 contacts of contacts and 125 probable contacts

The North Kivu Provincial health authorities are leading the current response with support from DRC's Ministry of Health and WHO. The re-emergence of EVD is a major public health issue in the DRC and there are gaps in the country's capacity to prepare for and respond to outbreaks.

Various environmental and socioeconomic factors including poverty, community mistrust, weak health systems and political instability could accelerate the rate of the emergence of EVD in the DRC. In addition to COVID-19, the DRC is also experiencing concurrent outbreaks of cholera, meningitis, plague and measles, which may impact capacity to rapidly detect and respond to the re-emergence of EVD cases.

Meningitis, Democratic Republic of the Congo, Tshopo Province

Incident assessment



Deteriorating: Incident is deteriorating with increased implications for public health

Event information

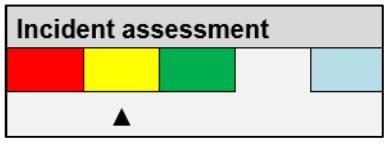
On 7 September 2021, the DRC declared a meningitis outbreak in Tshopo Province, following laboratory confirmation of *Neisseria meningitidis,* serogroup W, by the Institut Pasteur in Paris, France. As of 31 October 2021, 1,195 suspected cases of meningitis and 202 deaths have been reported. Overall, 29 cases have been laboratory confirmed. The WHO are providing support to the national health authorities in incident response.

Efforts have been made to reduce the case fatality rate through improved case management, but the delay in confirming the outbreak affected the rapid implementation of control measures. The case fatality rate has reduced from 100% at the onset of the outbreak to 8%, as of 31 October. Difficulty accessing the affected areas remains one of the major challenges for the management of this outbreak. A reactive vaccination campaign is ongoing.

Tshopo is located within the African meningitis belt (an area recognised as being at particularly high risk of meningitis epidemics). The last meningitis epidemic in this province occurred in November 2009 and resulted in 214 cases, including 18 deaths (case fatality rate of 8%).

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

No cases of type 1 wild polio virus were reported by the Global Polio Eradication Initiative (GPEI) in October 2021. Overall in 2021, 2 cases have been identified: one case in Pakistan and one case in Afghanistan.

Circulating vaccine derived polio virus (cVDPV)

As of 26 October, 13 acute flaccid paralysis (AFP) cases of cVDPV type 1 (cVDPV1) have been reported in 2021: 10 in Madagascar and 3 in Yemen.

As of 26 October, 419 AFP cases of cVDPV type 2 (cVDPV2) have been reported in 2021, across 18 countries. In 2020, a total of 1,074 AFP cases of cVDPV2 were reported, across 24 countries. Of the 2021 cases, 266 (63.5%) were from Nigeria, an increase from 8 cases reported in 2020. Guinea-Bissau reported 3 cases of cVDPV2, one in Biombo and 2 in Bissau. This is the first time that cases of cVDPV2 have been reported from this country.

One cVDPV2 case was reported in October from Rivne province in the Ukraine. Genetic sequencing indicates that the virus isolated from this case is closely linked with an environmental isolate from Tajikistan and is not related to the most recent 2015 outbreak or 2016 isolates from Ukraine.

Other polio updates

A nationwide polio vaccination campaign is set to recommence in Afghanistan on the 8 November 2021. This campaign will be the first in over 3 years to reach all children in Afghanistan, including more than 3.3 million children in some parts of the country who have previously remained inaccessible to vaccination campaigns.

Other incidents of interest

Anthrax

In October 2021, there were media reports of 6 suspected cases of anthrax, including one death, in a village within the state of Odisha in eastern India. The outbreak was linked to contaminated meat consumption.

In October 2021, in Kilimanjaro, Tanzania, the media reported 2 fatal suspected cases of anthrax, following consumption of contaminated meat.

Avian influenza A(H5N6), China

In October 2021, 3 cases of avian influenza A(H5N6) were reported in mainland China, bringing the total number of cases reported so far in 2021 to 24. From 2014 to date, a total of 50 human cases have been reported in mainland China.

On 18 October, a case was reported from Changde, Hunan Province, in a female farmer who had exposure to dead poultry.

On 27 October, a case was reported in a Yongzhou, Hunan Province, in a male farmer who had exposure to live domestic poultry.

On 28 October, authorities reported a case in a male resident of Dongguan, Guangdong Province. The individual works at a farmers' market with live domestic poultry.

Cholera

In Benin, during 2021 and as of 31 October, a total of 254 cases of cholera were reported, including 8 deaths (case fatality rate of 3.1%). Benin borders Nigeria and Niger, where there are ongoing cholera outbreaks.

In Cameroon, 16 suspected cases of cholera including one death has been reported between January and 3 October 2021. In 2020, 1,848 cases and 79 deaths were reported between 1 January and 30 September.

In the DRC**,** there were 5,950 suspected cholera cases, including 117 deaths (case fatality rate of 2.0%) reported between 1 January and 17 October 2021. Cases of cholera are reported each year in the DRC. This year's outbreak is of a lower intensity than in previous years, which may be attributed to response measures such as strengthening of water-sanitation.

In Mozambique**,** 191 cases of cholera (no deaths) were reported as of 19 October 2021 in the Caia District, Sofala, where a cholera epidemic was declared on 28 September 2021.

In Niger**,** as of 25 October 2021, a total of 5,469 cases of cholera, including 159 deaths were reported (case fatality rate of 2.9%). To date, 35 out of 72 health districts have reported cases.

In Nigeria**,** 93,932 suspected cases of cholera were detected across 33 states, between 1 January and 24 October 2021. This includes 3,293 deaths (case fatality rate of 3.5%). Cases have been declining since 29 August 2021, with a 39% decrease in cases between 10 and 17 October 2021.

Dengue

In 2021, 1,316,518 cases of dengue have been reported globally up to 29 October, the majority from Brazil (845,720), India (60,112), Vietnam (53,489), Peru (37,728) and Philippines (32,555).

As of 27 October, Pakistan has reported 25,478 cases of dengue this year. Dengue is endemic in Pakistan, but this year a rise in cases has been observed. The epidemic has affected cities including Lahore, Rawalpindi and Islamabad, putting pressure on public and private hospitals. In 2020, 3,442 dengue cases were identified and in 2019 there were 24,547 cases reported.

Bangladesh is reporting an increase in dengue cases compared to last year. As of 30 October, 23,357 cases, including 89 deaths, have been reported by the media. Approximately 20,000 of the cases were reported from the capital city of Dhaka. In 2020, there were 1,405 cases and 101,354 cases in 2019.

Hepatitis E

The hepatitis E virus outbreak in the Bentiu internally displaced persons camp, South Sudan, is ongoing. Since the beginning of the outbreak in 2018, and as of 17 October 2021, 1,354 cases and 9 deaths have been reported (case fatality rate of 0.7%). The upsurge in cases in 2021 is thought to be driven by declining water, sanitation and hygiene services.

Hantavirus

Media reported a fatal case of hantavirus infection in Araucanía, Chile in October, bringing the total cases reported in 2021 in this region to 6, including a deaths. The strain of hantavirus causing the infection was not specified.

Two cases of hantavirus infection were reported in Los Santos, Panama in October 2021, bringing the total reports of hantavirus infections in this province to 10 this year. The strain of hantavirus was not specified in the report.

A case of hantavirus infection was reported in California, United States of America (USA) by the media, however, the strain of hantavirus has not been confirmed.

Lassa fever

Nigeria has reported 3,496 suspected and 403 confirmed cases of Lassa fever in 2021, as of 24 October. There have been 79 deaths reported among confirmed cases (case fatality rate of 19.6%). Fewer cases have been reported in 2021 compared to the same period in 2020 (5,982 suspected, 1,119 confirmed cases and 232 deaths in confirmed cases, with a case fatality rate of 20.7%).

In Liberia, in 2021, as of 23 October, a total of 117 suspected cases, including 16 confirmed cases, with 10 deaths among the confirmed cases (case fatality rate of 62.5%) were reported.

As of 21 October 2021, the number of confirmed cases reported in Guinea remains at 8, including 7 deaths (case fatality rate of 87.5%). The most recent case was confirmed on 19 September 2021.

Measles

Although there has been a substantial decline in reported measles cases during the COVID-19 pandemic, a number of countries (including those that had previously eliminated or interrupted endemic transmission) are reporting new cases. This year, as of 6 October 2021, WHO's

Regional Office for Europe have reported sporadic measles cases in Belgium, Finland, France, Germany, Ireland, Italy, Poland and Romania. In non-EU or EEA countries, measles cases were reported in Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Serbia, Turkey, Ukraine and the UK. So far in 2021, no measles associated deaths have been reported from these countries.

High numbers of measles cases continue to be reported from specific regions around the world, particularly from parts of Africa. Notable outbreaks are summarised below.

In 2021, up to 17 October, the DRC has reported 47,844 suspected measles cases and 694 deaths (case fatality of 1.5%). The outbreak has been confirmed in 92 health districts across 23 affected provinces, including the capital city of Kinshasa. A total of 1,193 cases have been confirmed via serological testing, of which 65% are children under 5. DRC recorded it's worst measles epidemic on record from 2018 to 2020, which resulted in 460,000 cases and nearly 8,000 deaths.

From 1 January to 17 October 2021, Chad has reported 2,334 suspected cases from 97 out of 129 districts in the country. Of the investigated cases, 254 were confirmed by serological testing and 36 were clinically compatible cases. A total of 13 deaths have been reported from 4 districts (case fatality rate of 0.6%). In 2020, Chad reported 8,785 cases, with 363 confirmed cases and 41 deaths.

In 2021, as of 31 October, the Central African Republic (CAR) has reported 2,306 suspected cases of measles, including 9 deaths. A total of 75 cases have been confirmed by serological testing, 196 cases were epidemiologically linked, and 12 cases were clinically compatible. Overall, 10 out of 35 health districts have reached the epidemic threshold in 2021. The number of suspected cases reported in 2021 is lower than in 2020 (29,065 suspected cases).

From 1 January to 31 October 2021, Mali has reported a total of 1,433 suspected and 760 confirmed cases, including 2 deaths. This is an 89.4% increase in confirmed cases compared to the equivalent 2020 period.

In Burundi, a measles epidemic has been ongoing since November 2019 in camps hosting Congolese refugees, which subsequently spread to other communities. In 2021, and as of 17 October, Burundi has reported a total of 557 suspected cases, with 72 confirmed by serological testing, 274 by epidemiological link and 6 clinically compatible cases. No deaths have been reported. Six districts are currently reporting cases including Bubanza, Mpanda, Bugarama, Muyinga, Rumonge and Cibitoke.

Monkeypox

The DRC has reported 2,764 cases and 72 deaths between 1 January and 17 October 2021 (case fatality rate of 2.6%). For comparison, in 2020, there were a total of 6,257 suspected monkeypox cases, including 229 deaths, in the DRC.

Nipah virus disease

On 16 October 2021, an outbreak of Nipah virus disease was declared over in Kerala state, India, after no new cases had been reported for 42 days. The outbreak consisted of one isolated case of Nipah virus disease in Kozhikode district, reported on 4 September. The case was a 12-year-old child who presented with symptoms on 29 August and died on 5 September. A previous Nipah virus outbreak was reported in Kozhikode district in 2018.

Bangladesh has retrospectively updated the number of Nipah virus cases reported in 2020 to include an additional case, bringing the total for 2020 to 7 cases and 4 deaths. In 2021, 2 cases have been reported up to the end of October, with no deaths.

Plague, Madagascar

Between 29 August 2021 and 17 October 2021, a total of 41 suspected cases and 6 deaths (case fatality rate of 14.6%) of pneumonic plague have been reported in the Itasy region, Madagascar. Plague is endemic in Madagascar and cases are reported each year in bubonic and pneumonic forms. The favourable season for transmission of the disease generally lasts from September to April. Between 200 to 400 cases of plague are typically notified each year by the Ministry of Public Health, mainly in the bubonic form.

West Nile virus

In Europe, 154 human cases and 12 deaths from West Nile virus have been reported in 2021, as of 29 October. Greece (56), Italy (54) and Serbia (18) have reported the highest numbers of cases in Europe. In 2020, a total of 336 locally-acquired human cases of West Nile virus were reported in Europe.

Cases of West Nile virus have continued to be reported in the USA during October 2021. As of 19 October, 587 cases had been reported across 39 states. The state of Arizona had reported the most cases in this period (108 cases). However as of 27 October, the number of cases reported in Arizona had increased to 763. In total in 2020, 664 cases were reported in the USA across 39 states.

Yellow fever

Since September 2017, yellow fever cases have been reported across several states in Nigeria. From 1 January to 30 September 2021, a total of 1,518 suspected cases were reported from 428 Local Government Areas across 37 States, including the Federal Capital Territory. Nigeria is considered a high-risk country for yellow fever; it is endemic and due to suboptimal immunization coverage in most states and nationwide, the risk of spread is high.

On 1 October 2021, Venezuela reported 7 confirmed cases of yellow fever which were investigated between 23 and 24 September 2021. Venezuela is considered a high-risk country for yellow fever, where the virus is endemic. Vaccination coverage is suboptimal, creating a

high-risk for onward transmission and amplification of yellow fever among unvaccinated populations.

Zika virus, India

On 25 October 2021, the Government of India announced that a case of Zika virus had been confirmed in Kanpur, Uttar Pradesh. This is the first report of a confirmed Zika virus infection from Uttar Pradesh state. The case is a 57 year old male who tested positive on 22 October. A multidisciplinary team was deployed to the area to assist with control and containment measures. By the end of October 2021, media reported that a total of 10 Zika cases had been confirmed in Kanpur. Zika virus cases have previously been reported from the states of Gujarat, Madhya Pradesh and Rajasthan in 2018 and in the states of Kerala and Maharashtra in 2021.

Publications of interest

Avian influenza

Floyd and others recently reported on a disease and mortality event involving swans, seals and a fox at a wildlife rehabilitation center in the United Kingdom, during late 2020. Avian-origin influenza A(H5N8) was retrospectively determined as the cause of disease. Live virus was isolated from the swans, seals and the fox, and a single genetic change was detected as a potential adaptive mutation in the mammalian-derived viral sequences. No associated human influenza-like illness was reported in the weeks after the event.

In the Netherlands, Rijks and others reported the detection of highly pathogenic avian influenza A(H5N1) virus clade 2.3.4.4b in 2 red fox cubs. The cubs were found in the wild with neurologic signs. The virus was related to avian influenza viruses found in wild birds in the same area.

Cholera

A recent review examining drought-related cholera outbreaks in Africa identified a variety of potential mechanisms through which these outbreaks occurred, including poor access to water, marginalization of refugees and nomadic populations, expansion of informal urban settlements and demographic risks.

A recent publication describes the apparent discontinuation of cholera transmission in Haiti, since February 2019. Because vulnerabilities persist and vaccination remains limited, the findings suggest that case-area targeted interventions conducted by rapid response teams played a key role in preventing transmission. The authors question the presence of environmental reservoirs in Haiti and discuss progress toward elimination.

Dengue

A systematic review investigated the sources of dengue importation and the risk of dengue outbreaks globally. Of the studies analysed, 76.3% of imported dengue cases worldwide

were from Asia. Overall, 15.7%, 5.6%, 2.0% and 0.1% were imported from the Americas, Africa, Oceania and European regions, respectively. Imported dengue cases into Europe were from Asia (66.0%), Americas (21.9%), Africa (10.8%) and Oceania (1.1%). With the expansion of *Aedes* mosquito distribution globally, due to global warming and globalisation, dengue importation constitutes an emerging global health security threat.

Takeda's live attenuated tetravalent dengue vaccine candidate (TAK-003) is under evaluation in a long-term clinical trial across 8 dengue-endemic countries. A recent study reports that TAK-003 was efficacious against symptomatic dengue over 3 years. Efficacy declined over time but remained robust against hospitalised dengue. A booster dose evaluation is planned.

Lassa fever

Nigeria continues to experience annual outbreaks of Lassa fever. In a recent study, 5 Lassa virus (LASV) isolates, collected from the 2018 Nigerian outbreak, were genetically characterised. Analyses revealed that there was considerable phenotypic heterogeneity in LASV infections in Nigeria, which leads to a multitude of pathogenesis characteristics that could account for differences between subclinical and lethal Lassa fever infections.

Leprosy

A study by Hockings and others describes leprosy-like lesions in 2 wild populations of western chimpanzees in Guinea-Bissau and Côte d'Ivoire, West Africa. Longitudinal monitoring of both populations revealed the progression of disease symptoms compatible with advanced leprosy. *Mycobacterium leprae* was confirmed as the causative agent at each site. These findings suggest that *M. leprae* may be circulating in more wild animals than suspected, either as a result of exposure to humans or other unknown environmental sources.

Malaria

Artemisinin-based combination therapies, the recommended first-line treatment in malaria-endemic countries, have contributed considerably toward reducing the malaria burden globally. However, artemisinin-resistant *Plasmodium falciparum* parasites have emerged, posing a serious threat to malaria control worldwide. The findings of a recent study, investigating artemisinin resistant-malaria in Northern Uganda, suggest that the presence of 2 mutations in the *kelch13* gene in *P. falciparum* may be markers for detection of artemisinin-resistant parasites.

Measles

A retrospective review of measles surveillance data in The Gambia from 2011 to 2019, found that its goal to attain measles elimination status by 2020 has registered significant success, but it is unlikely that all target indicators will be met. Vaccination has been very effective in

preventing cases. There is variation in measles risk by health region, and it will be important to take this into account when designing prevention and control strategies.

A study by Anis and others describes a 2018 to 2019 measles outbreak in Israel, which resulted in 4,311 cases, despite vaccination coverage rates of 97% and 96% for the first and second doses. The authors noted similarities between this outbreak and an outbreak between 2007 and 2008, where cases were predominantly observed in unvaccinated pockets of the Jewish ultra-orthodox community, and case importation.

Poliomyelitis

A recent publication examining Pakistan's progress towards poliomyelitis eradication concluded that for WPV1 and cVDPV2 transmission to be eliminated, efforts are warranted by the Pakistan polio program to reduce the number of persistently missed children and ensure vaccination of children migrating into Pakistan because of political instability in Afghanistan.

Expanding outbreaks of cVDPV2 across Africa after the global withdrawal of trivalent oral poliovirus vaccine (OPV) in 2016 are delaying global polio eradication. A study by Cooper and others aimed to assess the effect of outbreak response campaigns with monovalent poliovirus type 2 vaccine (mOPV2) and the addition of inactivated poliovirus vaccine (IPV) to routine immunisation. The study findings suggest that as mucosal immunity declines, larger or faster responses with vaccination campaigns using type 2-containing OPV will be required to stop cVDPV2 transmission. IPV-induced immunity also has an important role in reducing the burden of cVDPV2 poliomyelitis in Africa.

Yellow fever

A recent systematic review assessed data on the yellow fever incidence and mortality rates in Africa from 1975 to 2020. The study found that the yellow fever incidence rate is quite constant; in contrast, the fatality rates varied widely across African countries over the study period. Standardised demographic health surveys and surveillance as well as accurate diagnostic measures are essential for early recognition, treatment and control of yellow fever.

Zika

A study in the Central-West Region of Brazil examined the spatial analysis and socio-environmental determinants of Zika virus (ZIKV) infection, and found that ZIKV infection was associated with higher population density, the incidence of dengue, *Aedes* larvae infestation index, and average rainfall. The important determinant of ZIKV infection incidence reduction was the increase in households attended by endemic disease control agents.

Other publications of interest

The 2021 report of the Lancet Countdown on health and climate change highlights that climate-sensitive infectious diseases are of increasing global concern and the environmental suitability

for the transmission of all infectious diseases is increasing. For non-*cholerae Vibrio* bacteria, the environmental suitability for transmission in northern latitudes has increased by 56% since the 1980s. The number of months suitable for malaria transmission has increased by 39% in highland areas of the low human development index country group and, during the past 5 years, the environmental suitability for the transmission of emerging arboviruses (for example, dengue, chikungunya, and Zika) was between 7% and 13% higher than it was in the 1950s.

In Australia, researchers report that a novel Hendra virus (HeV) genotype (HeV-g2) has been identified in 2 flying fox bat species submitted from 3 states, indicating that the level of genetic diversity for HeV is broader than first recognised.

Novel agents, rare pathogens and disorders

A recent publication reported a novel orthonairovirus, designated Yezo virus (YEZV), in 2 patients in Japan who presented with thrombocytopenia and leukopenia after tick bites in Hokkaido. Retrospective testing confirmed YEZV infection in 7 patients from 2014 to 2020.

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