

Feb | 25

# Monthly Infectious Disease Highlights – 1<sup>st</sup> – 25<sup>th</sup> February 2022

# Contents Page

## i. Contents

<b>Executive Summary.....</b>	<b>3</b>
<b>i. Human Diseases .....</b>	<b>4</b>
Acute Hepatitis A .....	4
Anthrax.....	4
Chickenpox.....	4
Cholera .....	5
Dengue.....	6
Influenza A .....	7
Lassa Fever .....	7
Leptospirosis .....	8
Measles.....	8
Polio.....	9
Shigellosis .....	11
Undiagnosed disease.....	11
<b>ii. Animal-related Disease Outbreaks .....</b>	<b>12</b>
Anthrax.....	12
Avian Influenza.....	12
Bovine Tuberculosis.....	15
Foot and Mouth Disease.....	15
<b>iii. Methods.....</b>	<b>16</b>

## Executive Summary

### COVID-19, Global

The world continues to battle the rampage of COVID-19 as global case count crosses the 400 million mark and death toll reaches almost 6 million. Although many countries are facing increasing number of cases, they are relaxing measures and progressively transiting towards endemicity. Omicron continues to be the dominant variant compared to the previous four most commonly circulating variants named Alpha, Beta, Gamma and Delta. Germany has replaced United States to record the highest weekly increment in February 2022 followed by Russia and South Korea. At least 188 countries have initiated mass vaccinations for 5+ year-olds and are continuing with booster doses amongst adults.

Weekly updates will cease from 1st March 2022 onwards and you can access previous reports on COVID-19 on CIDER's blog at <https://blog.nus.edu.sg/nuscider/>.

### Avian Influenza, Global

Since the previous infectious disease update, four new cases of avian influenza in humans (H5N6), have been reported in the Western Pacific region. To date, a total of 72 laboratory-confirmed cases of human infection with influenza A(H5N6) virus including 30 deaths have been reported in the Western Pacific Region since 2014. Two of the 4 cases have been reported in Mainland China which has a total of 67 of the 72 human cases of avian influenza A(H5N6).

### Lassa Fever

While Lassa fever is endemic in Mali, sporadic cases have been exported to Europe from West Africa where it is endemic. In February 2022, Lassa fever cases were reported in United Kingdom for the first time since 2009 and represents the second known case of secondary transmission in Europe. Previous case of secondary transmission of Lassa fever was reported in 2016 from Germany. In Nigeria, while an increase in suspected cases has been reported, the case fatality rate (CFR) of 19.1% is lower than the CFR for the same period in 2021 (27.5%).

## i. Human Diseases

### Acute Hepatitis A

Country/Province: Taiwan

Cases/Fatality: 28/0

Epidemiological Info:

- a. As of 15 February 2022, a total of 28 local cases of acute viral hepatitis A were reported in Taiwan.
- b. Of the total cases reported, 18 were among Thai migrant workers.
- c. During the same period in 2021, 11 cases were reported indicating a significant increase during the first 6 weeks of 2022.

Source: Outbreak News Today. Taiwan reports rise in hepatitis A, Many in Thai migrant workers. Published on 17 February 2022. Available at: <http://outbreaknewstoday.com/taiwan-reports-rise-in-hepatitis-a-many-in-thai-migrant-workers-21200/>

### Anthrax

Country/Province: DRC/South Kivu

Cases/Fatality: 9/2

Epidemiological Info:

- a. As of 3 February 2022, a total of 9 cases of anthrax were reported in the Kalonge health zone in South Kivu, Democratic Republic of the Congo (DRC).
- b. Among those infected, two have died and others are being treated.
- c. The infections have been linked to the consumption of guinea pig.

Source: Outbreak News Today. Anthrax outbreak linked to consuming guinea pigs in South Kivu, DRC. Published on 3 February 2022. Available at <http://outbreaknewstoday.com/anthrax-outbreak-linked-to-consuming-guinea-pigs-in-south-kivu-drc-13604/>

### Chickenpox

Country/Province: India/Karnataka

Cases/Fatality: 5/2

Epidemiological Info:

- a. A total of five cases including two deaths due to chicken pox have been reported in Nalwar Station Thanda in Kalaburagi district, Karnataka.
- b. All cases belong to the same household and the deaths reported were in an eight-year-old boy and his 15-year-old brother.
- c. Deaths due to chickenpox are rare and this is the first time they have been reported Kalaburagi.

Source: The New Indian Express. In rare case, two children die of chickenpox in Karnataka, three in hospital with symptoms. Published on 2 February 2022. Available at: <https://www.newindianexpress.com/states/karnataka/2022/feb/02/in-rare-case-two-children-die-of-chickenpox-in-karnataka-three-in-hospital-with-symptoms-2414386.html>

## Cholera

Country/Province: Cameroon

Cases/Fatality: 1,300/32

Epidemiological Info:

- a. As of 10 February 2022, at least 1,300 cholera cases including 32 deaths have been reported from five of the 10 regions.
- b. Majority of the cases have been reported from Bakassi, Douala and Yaounde.
- c. Last cholera outbreak was reported in November wherein several hundred people were infected including 13 deaths.

Source: VOA Africa. Cameroon Struggling to Contain Deadly Cholera Outbreak. Published on 10 February 2022. Available at: <https://www.voanews.com/a/cameroon-struggling-to-contain-deadly-cholera-outbreak/6435596.html>

Country/Province: Nigeria

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 30 January 2022, a total of 470 suspected cases including 9 deaths have been reported from 10 states in 2022.
- b. A total of 111,062 cases and 3,604 deaths due to cholera were reported nationally in 2021.
- c. The total number of cases reported exceeded the number reported in 2020.

Source: NCDC. Nigeria records 3,604 deaths from Cholera in 2021, NCDC states cause. Published on 7 February 2022. Available at: <https://theeagleonline.com.ng/nigeria-records-3604-deaths-from-cholera-in-2021-ncdc-states-cause/>. Cholera situation report. Published on 22 February 2022. Available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/4f56866783b8c066468d1c3cb398e294.pdf>

Country/Province: Philippines/ Davao Oriental

Cases/Fatality: 491/6

Epidemiological Info:

- a. As of 7 February 2022, a total of 491 cholera cases have been reported in Caraga town, Davao Oriental province since January 31.
- b. Cases include 6 deaths and 84 hospitalizations.

Source: Gov.ph. Cholera outbreak kills 6 in DavOr. Published on 7 February 2022. Available at: <https://www.pna.gov.ph/articles/1167204>

## Dengue

Country/Province: Brazil/ Minas Gerais

Cases/Fatality: 1,589/26

Epidemiological Info:

- a. On 20 January 2022, a total of 178 cases of dengue were reported in Minas Gerais state.
- b. Between 25 January and 7 February 2022, a total of 577 cases were recorded indicating a 224% rise in dengue cases.

Source: Outbreak News Today. Brazil: Dengue cases rise 224% in Minas Gerais. Published on 7 February 2022. Available at: <http://outbreaknewstoday.com/brazil-dengue-cases-rise-224-in-minas-gerais-17112/>

Country/Province: Peru

Cases/Fatality: 5,218/8

Epidemiological Info:

- a. As of 16 February 2022, a total of 5,128 cases of dengue including 8 deaths were reported in Peru.
- b. Majority of the cases (82.1%) were reported from Ucayali, Huánuco, Cajamarca, Cusco, San Martin, Piura, Junin and Loreto.
- c. Compared to the same period last year, an increase in cases and dengue outbreaks were observed in the regions of Áncash, Lima, Cusco, Cajamarca, Huánuco, Ucayali, Pasco, Piura, Lambayeque, Puno and La Libertad.
- d. In the province of Lima, outbreaks have occurred in the districts of La Molina, Lurigancho, Lima, Puente Piedra and Ate in the last five years with the most important outbreak in 2021 in Lurigancho, which reported a total of 531 dengue cases.

Source: Outbreak News Today. Peru declares epidemiological alert for dengue, Entomological agents deployed to North Lima. Published on 16 February 2022. Available at: <http://outbreaknewstoday.com/peru-declares-epidemiological-alert-for-dengue-entomological-agents-deployed-to-north-lima-31938/>

Country/Province: Timor-Leste

Cases/Fatality: 2,374/31

Epidemiological Info:

- a. As of 23 February 2022, a total of 2,374 dengue cases and 31 deaths have been reported in 2022. Dili reported 63% of cases totalling 1,488.
- b. This marks an increase in cases with 1,451 reported cases and 10 deaths (CFR 0.7%) in 2020 and 901 cases and 11 deaths (CFR 1.2%) in 2021.

Source: Outbreak News Today. CDC issues dengue travel advisory for Timor-Leste, other South Asian countries. Published on 24 February 2022. Available at: <http://outbreaknewstoday.com/cdc-issues-dengue-travel-advisory-for-timor-leste-other-south-asian-countries-85655/>

## Influenza A

Country/Province: China

Cases/Fatality: 2/0

Strain: avian influenza A (H5N6)

Epidemiological Info:

- a. As of 15 February 2022, two cases of avian influenza A (H5N6) were reported in Mainland China.
- b. The two cases were reported in a 50-year-old male from Baise city in Gaungxi and a 35-year-old male from Zhenjiang City in Jiangsu Province, both in critical conditions.
- c. From 2014 to date, a total of 67 human cases of avian influenza A(H5N6) have been reported in China.

Source: Outbreak News Today. China reports 4th and 5th human H5N6 avian influenza cases of 2022. Published on 15 February 2022. Available at <http://outbreaknewstoday.com/china-reports-4th-and-5th-human-h5n6-avian-influenza-cases-of-2022/>

Country/Province: USA/California

Cases/Fatality: Refer below

Strain: novel influenza A (H1N2)

Epidemiological Info:

- a. On 18 February 2022, a case of novel influenza A (H1N2) variant was reported in California, USA.
- b. The case is an adult aged  $\geq 18$  years who has since recovered.
- c. This is the third human infection with novel influenza A virus reported in USA during the 2021-22 influenza season. The previous two cases were reported in Ohio and Oklahoma on October 21 and Oklahoma Nov 2021 respectively.

Sources: Outbreak News Today. Oklahoma: Novel flu variant reported. Published on 29 November 2021. Available at: <http://outbreaknewstoday.com/oklahoma-novel-flu-variant-reported-82141/>, Ohio, North Dakota report human 'swine flu' infections. Published on 22 October 2021. Available at: <http://outbreaknewstoday.com/ohio-north-dakota-report-human-swine-flu-infections-12393/>, California: H1N2 influenza variant virus case reported, 3rd in the US this year. Published on 18 February 2022. Available at: <http://outbreaknewstoday.com/california-h1n2-influenza-variant-virus-case-reported-3rd-in-the-us-this-year-71675/>

## Lassa Fever

Country/Province: Nigeria

Cases/Fatality: 358/59

Epidemiological Info:

- a. As of 20 February 2022, a total of 1,995 suspected cases of Lassa fever were reported; 450 cases and 86 deaths were confirmed.
- b. 73% of all the confirmed cases have been reported from Ondo (32%), Edo (23%) and Bauchi (18%) States.
- c. The number of suspected cases has increased compared to that reported for the same period in 2021 (1,995 vs. 817).

Source: NCDC. An update of Lassa fever outbreak in Nigeria. Published on 12 February 2022. Available at: <https://ncdc.gov.ng/diseases/sitreps/?cat=5&name=An%20update%20of%20Lassa%20fever%20outbreak%20in%20Nigeria>

Country/Province: UK/England

Cases/Fatality: 3/1

Epidemiological Info:

- a. As of 11 February 2022, three cases of Lassa fever including one death have been reported in England.
- b. The cases belong to the same family and have been linked to recent travel to West Africa.
- c. Since 1980, a total of 8 imported cases of Lassa fever have been reported in UK with the last 2 cases being reported in 2009.

Sources: Outbreak News Today. Lassa fever reported in England, First cases reported in over a decade. Published on 9 February 2022. Available at <http://outbreaknewstoday.com/lassa-fever-reported-in-england-first-cases-reported-in-over-a-decade-51081/>, Lassa fever in the UK: 3rd case confirmed, death. . Published on 11 February 2022. Available at: <http://outbreaknewstoday.com/lassa-fever-in-the-uk-3rd-case-confirmed-death-77720/>

## Leptospirosis

Country/Province: Fiji

Cases/Fatality: 179/14

Epidemiological Info:

- a. As of 18 February 2022, a total of 179 cases and 14 deaths due to leptospirosis have been reported in Fiji.
- b. A total of 65 cases were reported in the central division, three in the east, 38 in the north and 73 cases in the west.
- c. Of the total deaths, 12 were recorded in the western division, one in the central division and one in the northern division.
- d. The previous leptospirosis outbreak was announced in January 2021 with 10 suspected fatalities.
- e. While leptospirosis case numbers were above expected numbers for this time of the year in the west and central divisions, an increasing trend has been noted in the north of the country.

Source: RNZ. Leptospirosis in Fiji: 14 dead, 179 cases confirmed. Published on 18 February 2022. Available at: <https://www.rnz.co.nz/international/pacific-news/461789/leptospirosis-in-fiji-14-dead-179-cases-confirmed>

## Measles

Country/Province: Afghanistan/Badakhshan

Cases/Fatality: Refer below

Epidemiological Info:

- a. Between 1 January and 29 January 2022, a total of 35,319 suspected cases of measles were reported; 3,221 confirmed cases and 156 deaths (CFR 4.8%) were confirmed.
- b. The highest number of reported cases (confirmed and suspected) were from Balkh, Ghazni, Helmand, Kandahar, Kabul, Paktika, and Paktya.
- c. Notification of suspected cases have been on the rise since July 2021 in all provinces.

Sources: Outbreak News Today. Afghanistan: Measles outbreak in Badakhshan claims more than 70 lives. Published on 6 February 2022. Available at <http://outbreaknewstoday.com/afghanistan-measles-outbreak-in-badakhshan-claims-more-than-70-lives-79825/>; WHO. Measles – Afghanistan. Published on 10 February 2022. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/measles-afghanistan>



Country/Province: DRC

Cases/Fatality: Refer below

Epidemiological Info:

- a. Since Jan 2022, more than 700 cases of measles were recorded in Kwango province with 730 cases recorded in Kitenda, 9 cases in Popo Kabaka and cases in Panzi.
- b. As of 8 February 2022, a total of 7 cases from the suspected 22 cases of measles have been recorded amongst children in Kasai-Oriental province.
- c. No case of measles was recorded in the Kasai-Oriental province in 2021 and has since resurfaced in the Miabi health zone.
- d. As of 9 February 2022, a total of 357 cases were reported in Budjala health zone.
- e. On 7 February 2022, measles epidemic was declared in Sud-Ubangi province with new cases resurfacing in 4 health zones: Gemena, Budjala, Bulu and Ndaget.
- f. As of 22 February 2022, a total of 122 cases (121 cases in Luputa and 1 case in Kandakanda) and 11 deaths were reported in the province of Lomami where a measles epidemic was declared.

Sources: Outbreak News Today. Measles outbreaks declared in Kasai-Oriental and Sud-Ubangi, DRC. Published on 9 February 2022. Available at <http://outbreaknewstoday.com/measles-outbreaks-declared-in-kasai-oriental-and-sud-ubangi-drc-50661/>, Measles: More than 350 cases reported in Budjala health zone, Sud-Ubangi. Published on 9 February 2022. Available at: <http://outbreaknewstoday.com/measles-more-than-350-cases-reported-in-budjala-health-zone-sud-ubangi-36936/>, Measles outbreak: More than 700 cases reported in Kwango, DRC. Published on 20 February 2022. Available at: <http://outbreaknewstoday.com/measles-outbreak-more-than-700-cases-reported-in-kwango-drc-70741/>, DR Congo: Measles outbreak declared in Lomami Province. Published on 24 February 2022. Available at: <http://outbreaknewstoday.com/dr-congo-measles-outbreak-declared-in-lomami-province-66337/>

## Polio

Country/Province: Afghanistan/Paktika

Cases/Fatality: 1/0

Epidemiological Info:

- a. As of 9 February 2021, one case of type 1 wild poliovirus (WPV1) was reported in Paktika making it the first case in 2022.
- b. A total of four WPV1 cases were reported in Afghanistan in 2021.

Source: Polio GEI. Polio this week as of 09 February 2022. Published on 10 February 2022. Available at: <https://polioeradication.org/polio-today/polio-now/this-week/>

Country/Province: Djibouti

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 16 February 2022, one case each of circulating vaccine-derived poliovirus type 2 (cVDPV2) were reported in Djibouti and Arta province.

Source: Polio GEI. Polio this week as of 16 February 2022. Published on 17 February 2022. Available at: <https://polioeradication.org/polio-today/polio-now/this-week/>

Country/Province: Portugal/Guinea-Bissau

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 17 February 2022, a total of four vaccine-derived polio cases were confirmed in children.
- b. The cases were reported after polio was declared as eradicated in 2019.

Source: Observador. Guinea-Bissau with confirmed cases of polio and suspected measles. Published on 17 February 2022. Available at: <https://observador.pt/2022/02/17/guine-bissau-com-casos-confirmados-de-poliomielite-e-suspeitos-de-sarampo/>

Country/Province: Malawi

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 9 February 2022, a case of WPV1 was reported in a three-year-old child in Tsabango, Lilongwe, Malawi.
- b. This is the first case of wild poliovirus reported since 1992.

Source: Outbreak News Today. Polio outbreak in Malawi, First case of wild poliovirus reported in country since 1992. Published on 18 February 2022. Available at: <http://outbreaknewstoday.com/polio-outbreak-in-malawi-first-case-of-wild-poliovirus-reported-in-country-since-1992/>

Country/Province: Mozambique

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 16 February 2022, one case each were reported in Nampula and Cabo Delgado province.
- b. Both cases have an onset in 2021.

Source: Polio GEI. Polio this week as of 16 February 2022. Published on 17 February 2022. Available at: <https://polioeradication.org/polio-today/polio-now/this-week/>

Country/Province: Niger

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 9 February 2022, five cases of circulating vaccine-derived poliovirus type 2 (cVDPV2) were reported in Niger.
- b. Cases were reported from Maradi (1), Tillaberi (1), Zinder (1) and Agadez (2), bringing the number of cases in 2021 to 15.

Source: Polio GEI. Polio this week as of 09 February 2022. Published on 10 February 2022. Available at: <https://polioeradication.org/polio-today/polio-now/this-week/>

Country/Province: Nigeria

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 16 February 2022, a total of 18 cases of cVDPV2 were reported in Nigeria.
- b. Cases were reported from Gombe (1), Plateau (1), Anambra (1), Oyo (1), Kaduna (2), Zamfara (2), Kebbi (7) and Sokoto (3), bringing the total number of cases to 413 in 2021.

Source: Polio GEI. Polio this week as of 16 February 2022. Published on 17 February 2022. Available at:

<https://polioeradication.org/polio-today/polio-now/this-week/>

Country/Province: Somalia

Cases/Fatality: Refer below

Epidemiological Info:

- a. As of 16 February 2022, one case of cVDPV2 was reported in Banadir province making it the first case of 2022.
- b. The country reported one cVDPV2 case in 2021.

Source: Polio GEI. Polio this week as of 16 February 2022. Published on 17 February 2022. Available at:

<https://polioeradication.org/polio-today/polio-now/this-week/>

## Shigellosis

Country/Province: UK

Cases/Fatality: 1,111/1

Epidemiological Info:

- a. As of 2 February 2022, a total of 47 cases have been reported in the UK between 1 September 2021 and 10 January 2022. This is a marked increase from 16 cases reported between 1 April 2020 and 31 August 2021.
- b. An increase in extremely antibiotic-resistant *Shigella sonnei* infections have been recorded in UK.

Source: Outbreak News Today. Drug resistant *Shigella* infections in MSM on the rise in the UK. Published on 2 February

2022. Available at: <http://outbreaknewstoday.com/drug-resistant-shigella-infections-in-msm-on-the-rise-in-the-uk-39394/>

## Undiagnosed disease

Country/Province: Uganda/Kyotera

Cases/Fatality: 10/10

Epidemiological Info:

- a. As of 1 February 2022, a total of 10 cases have died from an undiagnosed disease outbreak in Kyotera district.
- b. The disease was first reported six months ago in Nakatoke B village, Kijonjo parish, Kasasa sub-county.
- c. The World Health Organisation (WHO) and the Ministry of Health are jointly investigating the unknown illness to establish the cause of the death.

Source: The Independent. 'Strange' disease rages in Kyotera, 10 dead. Published on 1 February 2022. Available at:

<https://www.independent.co.ug/strange-disease-rages-in-kyotera-10-dead/>

## ii. Animal-related Disease Outbreaks

### Anthrax

Country/Province: Kurdistan/ Duhok

Cases/Fatality: Refer below

Species: Turkey

Epidemiological Info:

- a. As of 7 February 2022, a total of 75 cows have died from Anthrax in Duhok province.
- b. At least four to five cows have been dying every day since past two months and the animals showed no symptoms before their death.

Source: Rudaw. Deadly animal disease of anthrax spreads in Duhok. Published on 7 February 2022. Available at <https://www.rudaw.net/english/kurdistan/07022022>

### Avian Influenza

Country/Province: Cameroon

Cases/Fatality: 11,984/11,984

Species: Hens

Epidemiological Info:

- a. On 13 February 2022, an outbreak of highly pathogenic avian influenza (HPAI) was reported in a farm with 52-week-old laying hens in the Ouest region of Cameroon.
- b. Of the 13,513 suspected cases, a total of 11,984 birds were infected and died while the remaining 1,529 hens were killed and disposed of.
- c. The last occurrence of such an event was in March 2017.

Source: OIE-WAHIS. High pathogenicity avian influenza viruses (poultry) (Inf. with), Cameroon. Published on 13 February 2022. Available at: <https://wahis.oie.int/#/report-info?reportId=48651>

Country/Province: Canada/Nova Scotia

Cases/Fatality: 6,146/6,146

Species: commercial Turkey

Epidemiological Info:

- a. An outbreak of HPAI was confirmed on 30 January 2022 and reported on 4 February 2022, in a commercial turkey farm in Western Nova Scotia.
- b. A total of 11,800 susceptible cases were reported; 6,146 confirmed cases had died while the remaining were euthanised.
- c. The last occurrence of this was in July 2015.
- d. On 9 February 2022, another outbreak of HPAI subtype H5N1 was confirmed at a mixed farm in western Nova Scotia affecting poultry and products for local sale.

Sources: OIE-WAHIS. High pathogenicity avian influenza viruses (poultry) (Inf. with), Canada. Published on 4 February 2022. Available at: <https://wahis.oie.int/#/report-info?reportId=47982>; CBC. Avian influenza forces 12,000 turkeys to be killed at western N.S. barn. Published on 4 February 2022. Available at: <https://www.cbc.ca/news/canada/nova-scotia/avian-influenza-bird-flu-nova-scotia-commercial-turkey-barn-1.6339576>; WattPoultry.com. Another avian flu case confirmed in Nova Scotia. Published on 14 February 2021. Available at: <https://www.wattagnet.com/articles/44510-another-avian-flu-case-confirmed-in-nova-scotia>

Country/Province: Denmark

Cases/Fatality: 400/400

Species: Hens

Epidemiological Info:

- a. On 10 February 2022, outbreak of HPAI was confirmed in a holding consisting of 800 laying hens.
- b. A total of 400 died while the remaining 400 were culled and disposed of.

Source: OIE-WAHIS. High pathogenicity avian influenza viruses (poultry) (Inf. With), Denmark. Published on 11 February 2022. Available at: <https://wahis.oie.int/#/report-info?reportId=48568>

Country/Province: Japan/Hokkaido

Cases/Fatality: 16/15

Species: Wild birds

Epidemiological Info:

- a. An outbreak of HPAI in Japan was confirmed on 22 January 2022 and reported on 2 February 2022.
- b. As a result of this outbreak, 15 large-billed crows died from the infection and 1 white-tailed eagle was confirmed to be infected in Hokkaido.
- c. The last occurrence of this was in March 2011.

Source: OIE-WAHIS. Influenza A viruses of high pathogenicity (Inf. with) (non-poultry including wild birds) (2017-), Japan. Published on 2 February 2022. Available at: <https://wahis.oie.int/#/report-info?reportId=48019>

Country/Province: Philippines

Cases/Fatality: Refer below

Species: quail and ducks

Epidemiological Info:

- a. As of 24 February 2022, a total of four outbreaks of HPAI H5N1 strain were reported in Philippines.
- b. The first outbreak was detected on 6 January 2022, in a commercial duck farm in Baliuag, Bulacan with 6,950 susceptible cases (55 cases, no deaths).
- c. Two other outbreaks were detected on 21 and 27 January 2022, in two commercial quail farms in Candaba, Pampanga with 24 cases, 27,694 deaths and 6 cases, 10,029 deaths, respectively.
- d. The fourth outbreak was detected on 11 February 2022, in a backyard quail farm in Mexico, San Antonio with 13 cases and 4,522 deaths.
- e. The outbreaks were controlled by promptly culling and disposing all birds in affected quail and duck farms.
- f. These outbreaks have been reported a month and a half after the World Organization for Animal Health (OIE) declared the Philippines free of the last remaining A(H5N6) strain of the Avian Influenza as of January 8.

Source: Outbreak News Today. Philippines: Avian influenza reported in birds in Bulacan and Pampanga. Published on 22 February 2022. Available at: <http://outbreaknewstoday.com/philippines-avian-influenza-reported-in-birds-in-bulacan-and-pampanga-25168/>; OIE-WAHIS. High pathogenicity avian influenza viruses (poultry) (Inf. with), Philippines. Published on 18 February 2022. Available at: <https://wahis.oie.int/#/report-info?reportId=49105>

Country/Province: USA/Indiana

Cases/Fatality: Refer below

Species: commercial Turkey

Epidemiological Info:

- a. As of 9 February 2022, HPAI has been reported in a commercial turkey flock in Dubois County, Indiana.
- b. The affected premise has been quarantined while the birds on the property have been depopulated to ensure they do not enter the food system.
- c. H5N1 was identified to be the etiological strain and it is the state's first case of HPAI in commercial poultry since 2016, when 400,000 birds were killed.

Sources: Outbreak News Today. Indiana: Highly pathogenic avian influenza reported in Dubois County commercial turkey flock. Published on 9 February 2022. Available at <http://outbreaknewstoday.com/indiana-highly-pathogenic-avian-influenza-reported-in-dubois-county-commercial-turkey-flock-57677/>; Reuters. U.S. confirms highly pathogenic bird flu at Indiana turkey farm. Published on 10 February 2022. Available at: <https://www.reuters.com/business/environment/us-confirms-highly-pathogenic-bird-flu-indiana-turkey-farm-2022-02-09/>

Country/Province: USA/Kentucky

Cases/Fatality: Refer below

Species: Chickens

Epidemiological Info:

- a. As of 15 February 2022, a total of 240,000 chickens tested positive for HPAI in in Fulton County, Kentucky.
- b. The broiler chickens were infected with the same H5N1 strain of highly pathogenic avian flu as the turkeys in Indiana.
- c. This is Kentucky's first outbreak of the highly lethal bird flu since the previous one in 2015, which killed more than 50 million U.S. chickens and turkeys.

Source: Reuters. U.S. confirms highly pathogenic bird flu at Indiana turkey farm. Published on 10 February 2022. Available at: <https://www.reuters.com/business/environment/us-confirms-highly-pathogenic-bird-flu-indiana-turkey-farm-2022-02-09/>

Country/Province: USA

Cases/Fatality: Refer below

Species: Chickens

Epidemiological Info:

- a. As of 25 February 2022, HPAI was detected in a non-commercial backyard flock in Kalamazoo County, Michigan and in a commercial poultry flock in New Castle County, Delaware.
- b. With several birds from the affected flock dead, the premises have been put under quarantine and birds have been depopulated to prevent further disease spread and to ensure birds from the commercial poultry flock do not enter the food system.

Source: Outbreak News Today. Highly Pathogenic Avian Influenza reported in Delaware, Michigan. Published on 24 February 2022. Available at: <http://outbreaknewstoday.com/highly-pathogenic-avian-influenza-reported-in-delaware-michigan-79407/>

## Bovine Tuberculosis

Country/Province: USA/Michigan

Cases/Fatality: Refer below

Species: Cervid species

Epidemiological Info:

- a. As of 4 February 2022, bovine tuberculosis was found at two regulated cervid facilities in Alcona and Sanilac counties in Michigan.
- b. Cervid species include deer, elk, moose and other hoofed ruminant animals.
- c. The two sites are under quarantine while the herds have not yet been destroyed.
- d. This is the first time since 2009 the bacterial disease was found at such an agricultural facility.

Source: M Live. Bovine TB found at two cervid farms for first time in 13 years. Published on 4 February 2022. Available at:

<https://www.mlive.com/public-interest/2022/02/bovine-tb-found-at-two-cervid-farms-for-first-time-in-13-years.html>

## Foot and Mouth Disease

Country/Province: Israel

Cases/Fatality: 893/0

Species: Cattle

Epidemiological Info:

- a. As of 7 February 2022, two outbreaks of foot and mouth disease affecting a total of 893 cattle were reported in Israel.
- b. The first outbreak has been reported on 1 February 2022; 80 cases were confirmed in a total of 93 susceptible free ranging beef cattle in Judah and Samariaa.
- c. The second outbreak was reported on 3 February 2022; 20 cases were confirmed in a total of 800 susceptible fattening cattle in a farm in HaZafo division.
- d. All susceptible animals have been vaccinated in response to the outbreak.

Source: OIE-WAHIS. Foot and mouth disease virus. Published on 7 February 2022. Available at:

[https://www.gov.il/BlobFolder/reports/immediate-notification-fmd-07-02-21/he/animals\\_health\\_mouth\\_and\\_paws\\_pe-tlafaim-%2007-02-22.pdf](https://www.gov.il/BlobFolder/reports/immediate-notification-fmd-07-02-21/he/animals_health_mouth_and_paws_pe-tlafaim-%2007-02-22.pdf)

### iii. Methods

Daily monitoring of surveillance sites such as ProMED Mail, WHO GAR and CIDRAP, and a weekly scan of CDC, ECDC and Eurosurveillance sites was conducted to develop this report. Table 1 shows a list of sources used to prepare these reports. The information in this report is however not limited to this list alone.

**Table 1:** Main sources used to gather surveillance information

Sources*	Website
<b>ProMED Mail</b>	<a href="http://www.promedmail.org/">http://www.promedmail.org/</a>
<b>WHO GAR</b>	<a href="http://www.who.int/csr/outbreaknetwork/en/">http://www.who.int/csr/outbreaknetwork/en/</a>
<b>WHO WPRO</b>	<a href="http://www.wpro.who.int/en/">http://www.wpro.who.int/en/</a>
<b>WHO SEARO</b>	<a href="http://www.searo.who.int/en/">http://www.searo.who.int/en/</a>
<b>CIDRAP</b>	<a href="http://www.cidrap.umn.edu/">http://www.cidrap.umn.edu/</a>
<b>ECDC</b>	<a href="http://www.ecdc.europa.eu/en/publications/all_publications/Pages/index.aspx">http://www.ecdc.europa.eu/en/publications/all_publications/Pages/index.aspx</a>
<b>Travax</b>	<a href="https://www.travax.com/">https://www.travax.com/</a>
<b>Eurosurveillance</b>	<a href="http://www.eurosurveillance.org/Default.aspx">http://www.eurosurveillance.org/Default.aspx</a>
<b>US CDC HAN</b>	<a href="http://emergency.cdc.gov/HAN/">http://emergency.cdc.gov/HAN/</a>
<b>FluTrackers</b>	<a href="http://www.flutrackers.com/forum/">http://www.flutrackers.com/forum/</a>
<b>Saudi Arabia MOH</b>	<a href="http://www.moh.gov.sa/en/CCC/pressreleases/pages/default.aspx">http://www.moh.gov.sa/en/CCC/pressreleases/pages/default.aspx</a>
<b>Hong Kong CHP</b>	<a href="http://www.dh.gov.hk/eindex.html">http://www.dh.gov.hk/eindex.html</a>
<b>Chinese National Influenza Centre</b>	<a href="http://www.cnic.org.cn/eng/">http://www.cnic.org.cn/eng/</a>
<b>Taiwan CDC</b>	<a href="http://www.cdc.gov.tw/english/index.aspx">http://www.cdc.gov.tw/english/index.aspx</a>
<b>Singapore MOH</b>	<a href="http://www.moh.gov.sg/content/moh_web/home/statistics.html">http://www.moh.gov.sg/content/moh_web/home/statistics.html</a>
<b>Thailand MOPH</b>	<a href="http://203.157.15.110/boeeng/index.php">http://203.157.15.110/boeeng/index.php</a>
<b>Outbreak IDSP</b>	<a href="http://www.outbreak.Globalincidentmap.com/home.php">http://www.outbreak.Globalincidentmap.com/home.php</a>
<b>Department of Health Australia</b>	<a href="http://www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm#annual">http://www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm#annual</a>

\*Though sources are checked, not all sources are used in this report.

CIDER has initiated a set of new reporting criteria to increase reporting relevance of potential national and global impact. Only diseases that fulfil these criteria will be reported. We will cease reporting on previously reported diseases not matching these criteria from this report onwards. Please note that these criteria will also be undergoing constant evaluation to improve its relevance over time. Furthermore, CIDER will be monitoring the situation of reported infectious diseases which only fulfil 50% of the required proportion for fatality or morbidity. We welcome any comments on the use of these criteria.

The current criteria for reporting are:

1. Fatality (>10 in a week) or
2. Large morbidity (>100 affected in a week) or
3. Global concerns (currently MERS, Ebola, Novel Influenza, Polio, Measles) or
4. US CDC cat A bioagents & published outbreaks or
5. Unknown aetiology/ undifferentiated fever with fatality (>5) or large morbidity (>50)



**Centre for Infectious Disease Epidemiology and Research**

**Saw Swee Hock School of Public Health  
National University of Singapore  
Tahir Foundation Building  
12 Science Drive 2 #10-01  
Singapore 117549**

Email: [ephbox39@nus.edu.sg](mailto:ephbox39@nus.edu.sg)

SSHSPH site: <http://www.sph.nus.edu.sg>

CIDER blog: <https://blog.nus.edu.sg/nuscider/>