



COMMUNICABLE DISEASE THREATS REPORT

CDTR

Week 8, 19-25 February 2017

All users

This weekly bulletin provides updates on threats monitored by ECDC.

News

Antimicrobial resistance remains high shows new report from ECDC and EFSA

The findings in the latest <u>report</u> on antimicrobial resistance (AMR) in bacteria from ECDC and EFSA underline the serious threat AMR poses to public and animal health. Infections caused by bacteria that are resistant to antimicrobials lead to about 25 000 deaths in the EU every year. The report highlights that antimicrobial resistance levels in Europe continue to vary by geographical region, with countries in Northern and Western Europe generally having lower resistance levels than those in Southern and Eastern Europe. This year, the publication of the report is accompanied by a <u>data visualisation tool</u>, which displays data by country on antimicrobial resistance levels of some bacteria found in foods, animals and humans.

I. Executive summary

EU Threats

Influenza - Multistate (Europe) - Monitoring 2016-2017 season

Opening date: 13 October 2016 Latest update: 24 February 2017

Influenza transmission in Europe shows a seasonal pattern, with peak activity during winter months. ECDC monitors influenza activity in Europe during the winter season and publishes its weekly report on the <u>Flu News Europe website</u>.

→Update of the week

During week 7/2017, influenza activity remained elevated, but generally lower, across the region.

Hepatitis A outbreaks in the EU/EEA mostly affecting MSM – 2016-2017

Opening date: 12 December 2016 Latest update: 24 February 2017

Since February 2016, 287 confirmed hepatitis A cases infected with three distinct strains of sub-genotype IA virus have been reported by 13 EU countries: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Ireland, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. Most cases are reported among adult men who have sex with men (MSM), with only nine women affected. The main prevention measure in the context of the current outbreaks is hepatitis A vaccination of MSM. The ECDC guidance for HIV and STI prevention among men who have sex with men encourages Member States to offer and promote vaccination of MSM against hepatitis A. Information on vaccine availability should be included in health promotion programmes targeting MSM, particularly at sex venues. ECDC will soon publish an updated rapid risk assessment on this threat.

→Update of the week

Compared to the <u>rapid risk assessment</u> published by ECDC on 19 December 2016, there are 263 additional cases and one more outbreak strain reported.

Measles - Multistate (EU) - Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 24 February 2017

Measles, a highly transmissible vaccine-preventable disease, is still endemic in some EU countries where vaccination uptake remains below the level required to interrupt the transmission cycle. Elimination of measles requires consistent vaccination uptake above 95% with two doses of measles vaccine in all population groups, strong surveillance and effective outbreak control measures. In 2015, 16 EU/EEA countries were above the measles vaccination coverage target of 95% for the first dose, and six countries for the second dose. Fourteen countries in the EU have coverage rates of less than 95% for the first dose and 20 countries for the second dose.

→Update of the week

In the EU/EEA Member States, measles cases are reported in Austria, Belgium, Germany, Italy and Spain as well as in Romania where a large measles outbreak is ongoing with 3 071 cases reported as of 17 February 2017. Outside of the EU, outbreaks were detected in Switzerland, Congo, Guinea, South Africa and Republic of South Sudan.

Rubella – Multistate (EU) – Monitoring European outbreaks

Opening date: 7 March 2012 Latest update: 23 February 2017

Rubella, caused by the rubella virus and commonly known as German measles, is usually a mild and self-limiting disease which often passes unnoticed. The main reason for immunising against rubella is the high risk of congenital malformations associated with rubella infection during pregnancy. All EU Member States recommend vaccination against rubella with at least two doses of vaccine for both boys and girls. The vaccine is given at the same intervals as the measles vaccine as part of the MMR vaccine. No new outbreaks have been detected in the EU since June 2015.

→Update of the week

No new outbreaks have been detected since June 2015.

Non EU Threats

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 24 February 2017

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then, and up to 23 February 2017, 1 223 cases have been reported to WHO, including at least 397 deaths. No autochthonous cases have been reported outside China. Most cases are isolated, and sporadic zoonotic transmission from poultry to humans is the most likely explanation for the outbreak. Four hundred and twenty-five cases were reported since week 40/2016, representing a significant increase compared to previous seasons.

→Update of the week

Between 16 and 23 February 2017, WHO published update on 305 human cases and 36 deaths due A(H7N9) in China.

The <u>China Center for Disease Control and Prevention</u> reported on 19 February 2017, two human infections with a mutant strain of avian influenza A(H7N9) virus in Guangdong. The gene sequencing analysis found insertion mutations in the haemaglutinin gene. One case has recovered, the other case is still undergoing treatment.

On 20 February 2016 the health authorities in <u>Taiwan</u> reported a possible new A(H7N9) genotype in a recent imported case. A protein change was noted in the hemagglutinin (HA) protein that may make the virus more pathogenic in poultry as well as a mutation in the neuraminidase (NA) protein, that may suggest resistance to neuraminidase inhibitors antivirals such as oseltamivir (Tamiflu) and zanamivir (Relenza). Officials said the mutation seen in an H7N9 sample from the case may have been a spontaneous mutation that occurred while he was undergoing treatment.

Yellow fever - Brazil - 2016-2017

Opening date: 16 January 2017 Latest update: 24 February 2017

Yellow fever is a mosquito-borne viral infection present in some tropical areas of Africa and South America.

In South America, there are two transmission cycles of yellow fever:

-A sylvatic cycle, involving transmission of the virus between Haemagogus or Sabethes mosquitoes and non-human primates. The virus is transmitted by mosquitoes from non-human primates to humans when humans are visiting or working in the forest.

-An urban cycle, involving transmission of the virus between Aedes aegypti mosquitoes and humans. The virus is usually introduced in an urban area by a viraemic human who was infected in the forest.

Brazil has been experiencing an outbreak of yellow fever since December 2016. The outbreak was notified on 6 January 2017.

→Update of the week

Since the beginning of the outbreak, six states have reported autochthonous transmission of yellow fever: Minas Gerais, Espírito Santo and São Paulo are reporting confirmed cases, while Bahia, Tocantins and Rio Grande do Norte are reporting suspected cases.

Between 6 January and 22 February 2017, Brazil has reported 1 212 human cases (including 292 confirmed) of yellow fever. This represents an increase of 107 cases (including 38 confirmed) since 16 February.

Suspected and confirmed epizootics of yellow fever in non-human primates continue to be reported across the country.

II. Detailed reports

Influenza – Multistate (Europe) – Monitoring 2016-2017 season

Opening date: 13 October 2016 Latest update: 24 February 2017

Epidemiological summary

Week 7/2017 (13-19 February 2017)

Influenza activity remained elevated, but generally lower than in previous weeks, across the region. The proportion of influenza virus detections among sentinel surveillance specimens decreased to 36% from 44% in the previous week. The great majority of detected and subtyped influenza viruses were A(H3N2) and while the proportion of type B viruses increased, their numbers remained low, as commonly seen in the second half of an influenza season. The number of newly hospitalised laboratoryconfirmed influenza cases reported, primarily in people aged 65 years or older, continued to decrease.

Season overview

Influenza activity started early in week 46/2016, which is the earliest week that the overall influenza-positivity rate in sentinel specimens reached 10% since the emergence of A(H1N1)pdm09 viruses in 2009/10. Since week 40/2016, influenza A viruses have predominated, accounting for 96% of all sentinel detections. The great majority (99%) of subtyped influenza A viruses from sentinel sites are A(H3N2).

Confirmed cases of influenza virus type A infection reported from hospitals have predominantly been in adults aged over 65 years. Excess all-cause mortality has been observed substantially in people aged 15-64 years and markedly in people aged 65 years or older in the majority of the 19 reporting countries. This is commonly seen when the predominant viruses circulating are A(H3N2). Two-thirds of the A(H3N2) viruses genetically characterised belong to a recently emerged genetic subclade (3C.2a1). However, those that have been antigenically characterised are similar to the clade 3C.2a vaccine virus.

Recent vaccine effectiveness estimates, for all age groups against A(H3N2) illness, from Canada (42%), from the US (43%) and from Europe (38%) are consistent with estimates from Stockholm county (28%) and Finland (32%) early in the season. Given typically suboptimal vaccination coverage and the partial effectiveness of influenza vaccines, rapid use of neuraminidase inhibitors (NAIs) for laboratory-confirmed or probable cases of influenza infection should be considered for vaccinated and non-vaccinated patients at risk of developing complications. No reduced susceptibility to oseltamivir or zanamivir has been observed for any of the viruses tested so far this season.

ECDC assessment

The progression of the season has confirmed the conclusions of the ECDC <u>risk assessment</u> on seasonal influenza <u>updated</u> on 25 January 2017, indicating expected severe outcomes in the elderly related to the large circulation of A(H3N2) and resulting in some healthcare systems being under pressure.

Actions

ECDC monitors influenza activity in Europe during the winter season and publishes its weekly report on the Flu News Europe website. Risk assessments for the season are available from the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe websites. An updated risk assessment on seasonal influenza in EU/EEA countries was published by ECDC on 25 January 2017.

Hepatitis A outbreaks in the EU/EEA mostly affecting MSM - 2016-2017

Opening date: 12 December 2016 Latest update: 24 February 2017

Epidemiological summary

Since February 2016 and as of 22 February 2017, Austria, Belgium, Denmark, Finland, France, Germany, Italy, Ireland, the Netherlands, Portugal, Spain, Sweden and the United Kingdom reported 287 hepatitis A cases gathered in three simultaneously ongoing clusters.

Event 1 was reported though the Epidemic Intelligence Information System for Food- and Waterborne diseases and zoonoses (EPIS-FWD) on 6 December 2016 by the United Kingdom. Ten EU Member States have reported 190 cases with an identical virus sequence "VDR_521_2016": Spain (70 cases, preliminary data), Italy (41), the United Kingdom (30 cases), Germany (17), France

(14 cases), Portugal (9), Finland (3), Ireland (3), the Netherlands (2) and Sweden (1 case). Seventy-seven (94%) of 82 documented cases are male and 33 of 41 documented cases identify themselves as MSM.

Event 2 was reported through the Early Warning and Response System (EWRS) on 14 October 2016 by the Netherlands. Two Dutch cases were visited the EuroPride festival in Amsterdam between 23 July and 7 August 2016. Nine EU Member States have reported 70 cases with an identical virus sequence "RIVM-HAV16-090": The United Kingdom (31), The Netherlands (10), Germany (8), Austria (5), Belgium (5), France (5), Sweden (3), Italy (2) and Spain (1). Sixty-six of 67 documented cases are male and 44 of 49 documented cases identify themselves as MSM.

Event 3 was reported through EPIS-FWD on 11 January 2017 by Germany. Seven EU Member States have reported 27 cases with identical virus sequence "V16-25801": Germany (18), The United Kingdom (3), Italy (2) and Austria (1), Denmark (1), The Netherlands (1) and Spain (1). Nineteen of 20 documented cases are male and five identify themselves as MSM.

ECDC assessment

The main prevention measure in the context of the current outbreaks is hepatitis A vaccination of MSM. The ECDC guidance for HIV and STI prevention among men who have sex with men encourages Member States to offer and promote vaccination of MSM against hepatitis A. Information on vaccine availability should be included in health promotion programmes targeting MSM, particularly at sex venues.

Where hepatitis A vaccination is not universally offered to MSM or uptake is low, the following groups could be prioritised for vaccination:

• MSM travelling to destinations reporting outbreaks of hepatitis A among MSM;

• MSM living in areas of ongoing outbreaks;

• MSM at risk of severe outcomes from hepatitis A infection, for example those with hepatitis B virus and/or hepatitis C virus infection and those who inject drugs.

Sharing of microbiological and epidemiological details of new cases and questionnaires used during outbreak investigations through Epidemic Intelligence Information System for Food- and Waterborne Diseases and Zoonoses (EPIS-FWD) is encouraged for monitoring the epidemiological situation.

Actions

ECDC will soon publish an updated rapid risk assessment on this threat.

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 24 February 2017

Epidemiological summary

EU/EEA Member States

Δustria

In January 2017, the Austrian health authorities reported 32 measles cases in seven federal states. In comparison, 28 cases were reported in 2016.

Belgium

Since 20 December 2016, the region of Wallonia, Belgium, has been affected by an outbreak of measles. As of 15 February 2017, 56 cases, of which 30 are confirmed, have been reported. The index case visited Romania during the incubation period and is therefore considered an imported case. Various age groups are affected and most cases were unvaccinated. Five healthcare workers are part of the outbreak. All cases were infected with a genotype B3 strain, identical to the strain that was circulating in Romania, Italy and Austria at the end of 2016. In the other two regions in Belgium only three cases, one imported case in Flanders and two isolated cases in Brussels Capital region, were reported without direct association with the epidemic.

Germany

As of 16 February, the Robert Koch Institut (RKI) reported 43 measles cases for 2017. RKI highlights that the true number of cases is likely to be underestimated. Infections have occurred in the areas of Frankfurt, Lahn-Dill, Leipzig, Berlin and Duisburg.

<u>Italy</u>

In Ponte a Niccheri, in the area of Florence, twelve measles cases were reported: six cases are healthcare workers and six are patients who visited a hospital.

Romania - update

Between 1 January 2016 and 17 February 2017, 3 071 cases of measles, including 16 fatalities, have been reported in Romania. Since the last monthly update for the ECDC Round Table, 752 new cases were reported. All these cases are either laboratory-confirmed or have an epidemiological link to a laboratory-confirmed case. Infants and young children are the most affected population. An additional death is currently under investigation. Thirty-six of the 42 districts report cases, Caras Severin (West part of the country, at the border with Serbia) being the most affected district with 703 cases. Vaccination activities are ongoing in order to cover communities with suboptimal vaccination coverage.

Spain, Barcelona

As of 14 February, the public health agency of Barcelona reported <u>13 cases</u> of measles, all related to the index case who became infected in China in early January.

Outside the EU

Switzerland

According to the media, since the beginning of the year, 21 measles cases were reported in Switzerland. Children and adults are affected in all parts of the country. In previous years there were 70 cases in 2016, 36 cases in 2015, and 22 cases in 2014

Democratic Republic of Congo

Between 1 January and 5 February 2017, more than 80 suspected cases of measles have been reported in Mitwaba region (South-East of DRC).

Guinea

According to an Office for the Coordination of Humanitarian Affairs (OCHA) report, 93 measles cases have been confirmed since the beginning of the year in Guinea in the districts of Nzérékoré, Guékedou, Coyah, Dubréka, Fria, Kindia and four communes of Conakry. The country experienced a substantial drop in the measles vaccination coverage due to the Ebola epidemic.

South Africa

Since the beginning of February 2017, nine confirmed cases of measles have been reported in Stellenbosch (Cape Town region). In February, health authorities in Stellenbosch and Drakenstein initiated a mass vaccination campaign targeting 15 000 children.

South Sudan

Between week 44 in 2016 and week 3 in 2017, 605 measles cases have been reported from Wau (West of South Sudan), including nine deaths (CFR= 1.5%). Mass measles vaccination has been implemented since week 47, resulting in a decrease in the weekly number of cases.

Web sources: ECDC measles and rubella monitoring | ECDC/Euronews documentary | MedISys Measles page | EUVAC-net ECDC | ECDC measles factsheet

ECDC assessment

Although progress has been made towards elimination in the EU, it has not yet been achieved, as exemplified by the worrying situation currently reported in Romania. According to the results of the fifth Regional Verification Commission meeting for the elimination of measles and rubella in Europe, held 24-26 October 2016, 24 countries in the region have been judged to have eliminated measles.

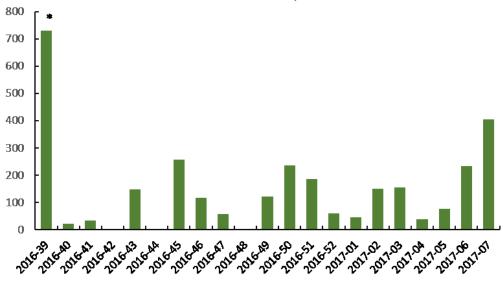
Web source: WHO-EU

Actions

ECDC monitors measles transmission and outbreaks in the EU and neighbouring countries through enhanced surveillance and epidemic intelligence activities.

New measles cases per week of reporting, week 2016-39 to 2017-07, Romania

New measles cases per week of reporting, week 2016-39 to 2017-07, Romania



^{*} cumulative number of cases in 2016 until week 39 (no weekly data available)

Slovakia Ukraine Hungary Moldova Ukraine Romania Serbia Bulgaria

Distribution of measles cases, by region, from week 2016-39 to 2017-07, Romania

Rubella – Multistate (EU) – Monitoring European outbreaks

Opening date: 7 March 2012 Latest update: 23 February 2017

Epidemiological summary

No new outbreaks have been detected in the EU since June 2015.

Web sources: ECDC measles and rubella monitoring | ECDC rubella factsheet | WHO epidemiological brief summary tables | WHO epidemiological briefs | Progress report on measles and rubella elimination | European Regional Verification Commission for Measles and Rubella Elimination (RVC) (2016)

ECDC assessment

The World Health Organization (WHO) has targeted the elimination of measles and rubella in the 53 Member States of the WHO European Region. Elimination is defined as the absence of endemic cases in a defined geographical area for a period of at least 12 months, in the presence of a well-performing surveillance system. Regional elimination can be declared after 36 or more months of the absence of endemic measles or rubella in all Member States of the WHO European Region. Although progress has been made towards elimination, this goal has not yet been achieved. The fifth Regional Verification Commission meeting was held 24-26 October 2016. According to the results, 24 countries in the WHO EURO region have been judged to have eliminated rubella.

Web source: WHO-EU

Actions

ECDC closely monitors rubella transmission in Europe by analysing the cases reported to The European Surveillance System and through its epidemic intelligence activities. Twenty-four EU and two EEA countries contribute to the enhanced rubella surveillance. The purpose of the enhanced rubella surveillance is to provide regular and timely updates on the rubella situation in Europe in support of effective disease control, increased public awareness, and achieving the target of rubella and congenital rubella elimination.

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 24 February 2017

Epidemiological summary

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then, and up to 23 February 2017, 1 223 cases have been reported to WHO, including at least 397 deaths. The A(H7N9) outbreak shows a seasonal pattern peaking in the winter months, with only sporadic cases during the summer. Cases reported between weeks 41 and 40 in the subsequent year are considered to belong to one epidemic wave. The first wave in spring 2013 (weeks 7/2013–40/2013) included 135 cases; 319 cases were reported during the second wave (weeks 41/2013–40/2014), 223 cases were reported during the third wave (weeks 41/2014–40/2015), and 121 were reported in wave four (weeks 41/2015–40/2016). A fifth wave started in October 2016 (week 41/2016), with 425 cases as of 23 February 2017.

The 1 223 cases have been reported from Zhejiang (294), Guangdong (242), Jiangsu (229), Fujian (97), Anhui (83), Hunan (61), Shanghai (55), Jiangxi (39), Hubei (23), Hong Kong (20), Shandong (12), Beijing (10), Xinjiang (10), Henan (8), Guizhou (6), Sichuan (6), Guangxi (5), Taiwan (5), Hebei (4), Liaoning (3), Jilin (2), Macau (2), Tianjin (2) and Yunnan (2).

Three imported cases have been reported: one in Malaysia and two in Canada.

Web sources: Chinese CDC | WHO | WHO FAQ page | ECDC | Hong Kong CHP

ECDC assessment

This is the fifth northern hemisphere winter season with human cases due to A(H7N9) infections. During this wave, the number of human cases is already higher than during the whole last wave in 2015–2016, with a significantly higher number than in the same period of the two previous epidemic seasons. A steep increase of human cases has been reported since the beginning of December 2016 from China. The mode of transmission does not seem to have changed during this season. The majority of recently reported human cases are associated with exposure to infected live poultry or contaminated environments, including markets where live poultry are sold. The age of the infected humans is comparable with previous waves. Influenza A(H7N9) viruses continue to be detected in poultry (and environments where poultry are present) in the areas where human cases are occurring. However, more human cases are detected in rural areas. The upsurge of human cases is most likely due to a higher environmental contamination related to live bird markets.

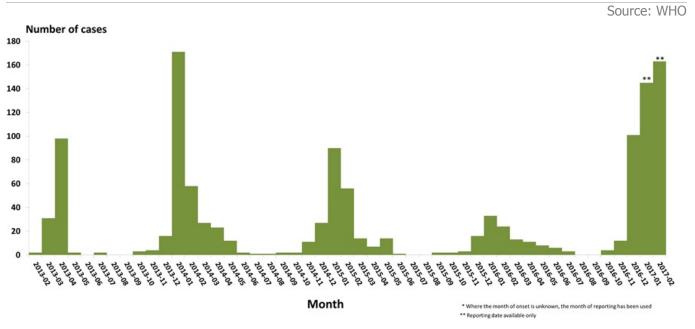
EU citizens living or visiting influenza A(H7N9)-affected areas in China are advised to avoid live bird markets or backyard farms as well as contact with live poultry or their droppings. Food should be only consumed if properly cooked. Since environmental contamination leads to a higher risk of exposure to A(H7N9), it is also possible that travel-related cases could be detected in Europe. The recent upsurge of human cases due to a higher risk of exposure indicates the possibility of sporadic cases getting imported to Europe. However, the risk of the disease spreading in Europe through humans is considered low, as the virus does not appear to transmit easily from human-to-human.

The ECDC risk assessment and the options for response have not changed since the last rapid risk assessment in January 2017. However, these new developments need to be monitored and assessed. ECDC will continue to follow the epidemiological and scientific developments related to avian influenza A(H7N9) virus and will continue to work with public health and veterinary experts in the EU/EEA Member States, WHO and other international partners.

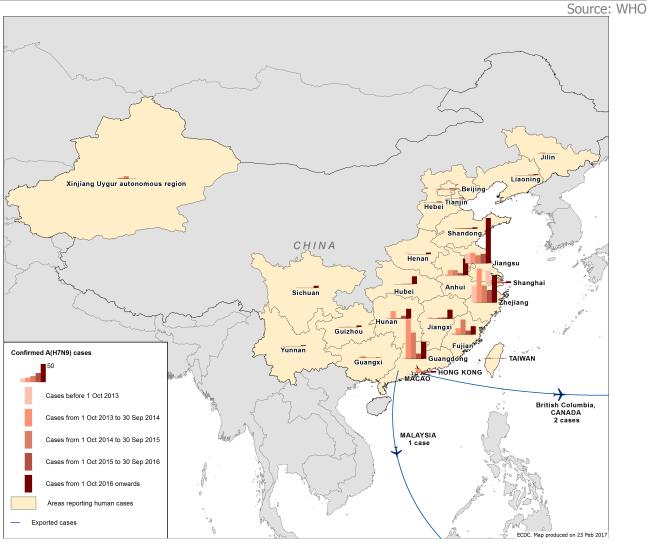
Actions

ECDC published an updated Rapid Risk Assessment on 27 January 2017 and a Public Health Development on 24 February 2017.

Distribution of confirmed cases of A(H7N9) by month February 2013 until 23 February 2017



Distribution of confirmed cases of A(H7N9) by five periods(weeks 07/2013 to 8/2017)



Yellow fever – Brazil – 2016-2017

Opening date: 16 January 2017 Latest update: 24 February 2017

Epidemiological summary

On 6 January 2017, Brazil reported an outbreak of yellow fever. The index case had onset of symptoms on 18 December 2016. The first laboratory confirmation was notified on 19 January 2017.

As of 22 February 2017, Brazil has reported 1 212 cases (920 suspected and 292 confirmed), including 210 deaths (109 suspected and 101 confirmed), in six states. The case-fatality rate is 17.3% among all cases and 34.6% among confirmed cases.

States reporting suspected and confirmed cases:

- Minas Gerais has reported 1 008 cases (762 suspected and 246 confirmed), including 176 deaths (92 suspected and 84 confirmed).
- Espírito Santo has reported 177 cases (135 suspected and 42 confirmed), including 27 deaths (13 suspected and 14 confirmed).
- São Paulo has reported 10 cases (six suspected and four confirmed), including four deaths (one suspected and three confirmed).

States reporting suspected cases:

- Bahia has reported 13 suspected cases, including one fatal.
- Tocantins has reported three suspected cases, including one fatal.
- Rio Grande do Norte has reported one suspected case, fatal.

In addition, investigations are ongoing to determine the probable infection site of five further suspected cases.

The Ministry of Health of Brazil has launched mass vaccination campaigns in addition to routine vaccination activities. As of 22 February 2017, 13.85 million extra doses of yellow fever vaccine have been sent to five states: Minas Gerais (6.5 million), São Paulo (2.75 million), Espírito Santo (2.65 million), Rio de Janeiro (1.05 million) and Bahia (900 000).

Sources: Brazil MoH

ECDC assessment

Brazil has reported only sylvatic cases of yellow fever in 2016 and 2017. However, the ongoing outbreak should be carefully monitored, as the establishment of an urban cycle of yellow fever would have the potential to quickly affect a large number of people.

EU/EEA citizens who travel to, or live in, areas where there is evidence of yellow fever virus transmission should check their vaccination status and get medical advice about getting vaccinated against yellow fever.

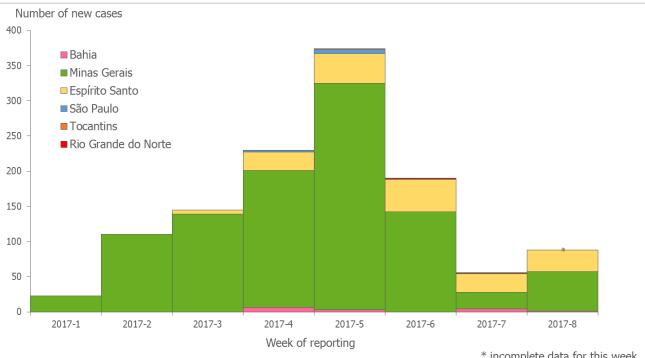
In Europe, *Aedes aegypti*, the primary vector of yellow fever in urban settings, is present in Madeira. Recent studies have shown that *Aedes albopictus* can potentially transmit the yellow fever virus.

However, the risk of the virus being introduced into local competent vector populations in the EU through viraemic travellers from Brazil is considered to be very low, as the current weather conditions in Europe are not favourable for vector activity.

Actions

ECDC closely monitors this event in collaboration with the World Health Organization. ECDC published a <u>rapid risk assessment</u> on 26 January 2017, is producing <u>epidemiological updates</u> and a <u>map for travel advice</u>.

Distribution of suspected and confirmed human cases of yellow fever by week, Brazil, 2017

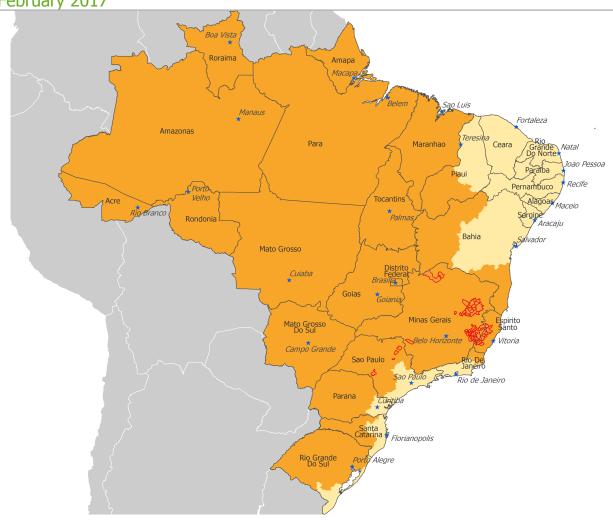


* incomplete data for this week

Distribution of human cases of yellow fever by state, Brazil, 2017

	All cases	Suspected cases	Confirmed cases
Minas Gerais	1 008	762	246
Espírito Santo	177	135	42
São Paulo	10	6	4
Bahia	9	9	0
Tocantins	2	2	0
Rio Grande do Norte	1	1	0
Under investigation	5	5	0
Total	1 212	920	292

Distribution of confirmed human cases of locally-acquired yellow fever, Brazil, 2017, as of 24 February 2017



Confirmed cases of locally-acquired yellow fever, as of 22 February 2017

Municipalities with confirmed locally-acquired cases since 6 January 2017

Area at risk for yellow fever transmission

Area considered at no risk for yellow fever transmission

Federal state State capital city

ECDC. Map produced on: 24 Feb 2017 ECDC map maker: https://emma.ecdc.europa.eu The Communicable Disease Threat Report may include unconfirmed information which may later prove to be unsubstantiated.