COMMUNICABLE DISEASE THREATS REPORT

CDTR
Week 15, 9-15 April 2017

All users

This weekly bulletin provides updates on threats monitored by ECDC.

I. Executive summary

EU Threats

Multidrug-resistant tuberculosis in migrants – Multistate (Europe) – 2016/2017

Opening date: 18 November 2016

A cluster of multidrug-resistant tuberculosis (MDR TB) identified through whole genome sequencing (WGS) was notified to ECDC in December 2016. Cases were asylum seekers, mainly from Somalia, Eritrea, Ethiopia and Sudan. As of 7 April 2017, 28 cases have been reported from Germany (14), Switzerland (8), Austria (2), France (2), Finland (1) and Sweden (1).

➔Update of the week

No update.

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 13 April 2017

A measles outbreak in Romania has been ongoing since February 2016 and cases continue to be reported despite ongoing response measures that have been implemented at national level through reinforced vaccination activities. Between 1 January 2016 and 7 April 2017, Romania reported 4 090 cases. In 2016, a number of EU/EEA countries reported measles outbreaks, and an increase in the number of cases continues to be observed in 2017. Some previous and ongoing measles outbreaks in other EU countries have been epidemiologically linked to the current outbreak in Romania. However, more extensive information on strain sequences would allow further insight into the epidemiological investigation. All EU/EEA countries report measles cases on a monthly basis to ECDC and these data are published every month. In addition, since 10 March 2017, ECDC has been reporting on measles outbreaks in Europe on a weekly basis through epidemic intelligence activities.

➔Update of the week

In Europe, measles cases have been reported in Austria, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Iceland, Italy, Portugal, Spain and Sweden as well as in Romania, where 4 090 cases had been reported as of 7 April 2017.

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Non EU Threats

New! Detection of pathogenic bacteria in CRISPR Kit – Multistate

Opening date: 11 April 2017 Latest update: 13 April 2017

A do-it-yourself genetic engineering kit 'The CRISPR Cas 9 Bacterial Genomic Editing Kit' from a company in the US has been found positive for pathogenic microorganisms. This product is available to the general public for sale on the Internet.

Yellow fever – South America – 2016/2017

Opening date: 16 January 2017 Latest update: 13 April 2017

Yellow fever is a mosquito-borne viral infection present in some tropical areas of Africa and South America. Brazil has been experiencing an outbreak of yellow fever since December 2016. The outbreak was notified on 6 January 2017. From the beginning of 2017 to 10 April, the World Health Organization (WHO) has also reported cases in Bolivia, Colombia, Ecuador, Peru and Suriname.

➔Update of the week

Between 5 and 6 April 2017, Brazil has reported 120 additional cases of yellow fever, 102 suspected and 18 confirmed.

Chikungunya, Dengue and Zika – Multistate (World) – Monitoring global outbreaks

Opening date: 27 January 2017 Latest update: 13 April 2017

Chikungunya, dengue and Zika virus infections are vector-borne diseases that affect from 50 to 100 million people each year. In the past decade, all three diseases have been reported across an increasing number of countries. Chikungunya virus infection is reported in Asia, Africa and, since 2013/2014, in the Caribbean, the Americas and the Pacific. Dengue fever is present in Asia, the Pacific, the Caribbean, the Americas and Africa. Zika virus circulation is reported in Asia, the Pacific, the Caribbean, the Americas and Africa. No autochthonous chikungunya, dengue or Zika cases related to vector-borne transmission were detected in EU/EEA Member States in 2016. From 1 February to 18 November 2016, Zika virus infection and the related clusters of microcephaly cases and other neurological disorders constituted a public health emergency of international concern (PHEIC). Since 2015 and as of 11 April 2017, 72 countries and territories have reported evidence of mosquito-borne transmission of the virus.

➔Update of the week

This month, the significant events for Zika are:
- A revised country classification scheme has been developed by WHO, in collaboration with the US CDC and ECDC, to categorise the epidemiological profile of vector-borne Zika virus transmission in countries and territories. ECDC has also made limited adjustments in order to better reflect the risk to travellers.
- Since the publication of the new country classification on ECDC's website on 6 April, the changes in the map are:
  * American Samoa changed to "WHO category 3";
  * Chaco Province in Argentina was added to "WHO category 1"; and
  * Bahia State in Brazil changed to "WHO category 2 areas with new documented intense transmission".
- Since 1 February 2017 and as of 9 March, Mexico and Saint Martin reported microcephaly and other central nervous system malformations potentially associated with Zika virus infection for the first time. In addition, Curaçao and Trinidad and Tobago reported cases of Guillain-Barré syndrome associated with Zika virus infection.

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 13 April 2017

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 12 April 2017, 1 378 cases have been reported to WHO, including at least 497 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. Since week 40/2016, 580 cases have been reported, representing a significant increase compared to previous seasons.

➔Update of the week

Since the last update, 14 additional cases have been detected in China, including the first case reported in Tibet.

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II. Detailed reports

Multidrug-resistant tuberculosis in migrants – Multistate (Europe) – 2016/2017

Opening date: 18 November 2016

Epidemiological summary

In December 2016, Switzerland initially reported to the European Commission a cluster of seven MDR TB cases in newly-arrived migrants from Somalia (5), Eritrea (1) and Ethiopia (1). The European Commission informed the Member States through the Early Warning and Response System (EWRS). In response to the EWRS notification, Austria, Finland, France, Germany and Sweden reported cases linked to this cluster by WGS. Switzerland later reported an eighth case. As of 7 April 2017, isolates from 28 cases are part of the WGS cluster and are reported from Germany (14), Switzerland (8), Austria (2), France (2), Finland (1) and Sweden (1). All cases have a recent history of migration from Somalia (24), Eritrea (2), Ethiopia (1) and Sudan (1). After interviewing the cases, a preliminary analysis shows that most of them reported symptoms soon after arrival or before, suggesting that transmission probably did not occur in the host country. Several of the refugees had a long stay in Bani Walid (Libya) where the conditions seem to be favourable for TB transmission. Bulgaria, Croatia, Cyprus, Denmark, Estonia, Greece, Hungary, Italy, Latvia, Luxembourg, Malta, Poland, Portugal and Romania have not reported cases with corresponding MIRU-VNTR 24 loci and/or a DST profile belonging to this cluster.

ECDC assessment

According to the latest WHO TB Report, the incidence of TB in Somalia was around 274 cases per 100 000 population in 2015. MDR TB was found in 8.7% of new TB cases, and in 47.0% of previously-treated TB cases in Somalia. According to the International Organization of Migration, 2.1% of the refugees in Europe (i.e. about 10 000 people) are from Somalia.

Multi-country outbreak investigations coordinated by ECDC are focusing on identifying exposure risk factors including the travel itinerary and history of possible contacts among patients in this single-strain outbreak of MDR TB. Although the limited number of cases detected so far suggests a restricted event, more cases may be expected in association with this cluster. Sharing WGS-based typing information on outbreak-related cases among those countries affected is important to delineate the extent of the outbreak.

The rate of TB in a foreign-born population does not have a significant impact on TB in the native population in the EU/EEA. Therefore, while there remains a risk of additional cases being detected among refugees, the risk of transmission to EU/EEA resident populations is very low.

Actions

ECDC is coordinating the international investigations. ECDC is focusing on identifying exposure risk factors, which includes the analysis of travel itineraries and the results of contact tracing. A teleconference on this issue was held on 29 March. ECDC published an updated rapid risk assessment on its website on 12 April.

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 13 April 2017

Epidemiological summary

Countries with updates since last week

Bulgaria

Since mid-March 2017 and as of 12 April, Bulgaria reported 45 cases in the city of Plovdiv, an increase of 15 cases since the last report. On 9 April 2017 Bulgaria reported the first death, a 10-month-old unimmunised child. According to media, a paediatric hospital has been put under quarantine due to measles.

Czech Republic

As of 10 April 2017, 38 cases of measles have been reported in the Moravian-Silesian region of the Czech Republic. Twenty of the cases are children below the vaccination age and 18 are adults. Of the 18 adults, six are healthcare workers. According to media, a hospital has been closed due to hospital staff being infected.

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Hungary
Between 21 February and 22 March 2017, Hungary reported 54 cases of measles. The health authorities have lifted the quarantine from the hospital in Mako, southeast Hungary, as no new cases were detected in two weeks.

Italy
Since the beginning of 2017 and as of 9 April, Italy has reported 1 473 cases, with 142 cases among healthcare workers. The cases are reported from 18 of the 21 regions in Italy. The majority of the cases (92%) are from Piedmont, Lazio, Lombardy, Tuscany, Abruzzi, Veneto and Sicily. Most of the cases are over 15 years and 88% of the cases were not vaccinated. During March 2017, 727 cases of measles were reported compared to 75 in March 2016.

Romania
Between 1 January 2016 and 7 April 2017, Romania reported 4 090 cases of measles, including 19 deaths. Cases are either laboratory-confirmed or have an epidemiological link to a laboratory-confirmed case. Infants and young children are the most affected population. Thirty-eight of the 42 districts have reported cases, Caras Severin (western part of the country, along the border with Serbia) being the most affected district with 854 cases. Vaccination activities are ongoing in order to cover communities with suboptimal vaccination coverage. According to media, a hospital has been put under quarantine in Craiova and two additional cases have died.

Spain
An outbreak started in the first week of January in Barcelona metropolitan area in Spain, due to an imported measles case from China. As of 27 March, 44 cases have been confirmed. Most of the cases are unvaccinated or incompletely vaccinated adults. Four of the cases are children, and ten cases were hospitalised.

Countries with no updates since the last week
Austria
Since the beginning of 2017 and as of 6 April, Austria has reported 72 cases, which exceeds the cumulative number of cases reported in 2016.

Belgium
Since 20 December 2016 and as of 31 March 2017, Wallonia has reported 266 cases. The outbreak affects all provinces of Wallonia, with the exception of the province of Luxembourg. All age groups are affected, 52.5% of the cases are over 15 years. Most of the cases were not vaccinated or did not know their vaccination status. Nearly 40% were hospitalised. No deaths have been reported. The index case of the epidemic travelled to Romania during the incubation period. In Flanders, one isolated imported case was reported in January and another in March, with possible links to a cluster in Wallonia. In the Brussels Capital Region, one isolated imported case was reported in February and two cases were notified in March without known links to the epidemic in Wallonia. Both imported cases had a travel history to Romania during the incubation period, and the national reference centre for measles, mumps and rubella (WIV-ISP) identified genotype B3, which is the same strain found in Romania, Italy and Austria, at the end of 2016.

Denmark
On 15 March 2017, Denmark reported an imported case of measles in an unvaccinated adult who was infected during a holiday in Asia.

France
Since the beginning of 2017, France has reported measles cases in several departments. As of 28 February 2017, France had reported 79 cases, mainly related to an outbreak in Lorraine with more than 50 cases until end of February. Two cases had encephalitis and seven severe pneumonia. The virus is circulating in several departments and Moselle and Meurthe-et-Moselle are currently the most affected areas, with 61 cases as of 13 March 2017.

Germany
According to the national public health institute, since the beginning of 2017 and as of 12 March, Germany has reported 272 cases, an increase by 37 cases since the previous update. In the same period in 2016, Germany reported 18 cases. According to media, Duisburg has reported 165 cases since the beginning of the year and as of 31 March.

Iceland
On 31 March, Iceland reported two cases in two 10-month-old twin siblings. The infants were unvaccinated. The first case was diagnosed 10 days before the second case. This is the first time in a quarter of a century that measles infection has occurred in Iceland.

Portugal
On 31 March, Portugal reported one imported case from Venezuela and another unrelated case, an 11-month-old baby, most

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likely infected by a family member living in another EU country, visiting Portugal. Following these cases, Portugal reported three additional cases on 7 April.

Sweden
Since the beginning of 2017 and as of 21 March 2017, Sweden reported 15 cases of measles, including three imported cases.

Switzerland
Since the beginning of 2017 and as of 21 March 2017, Switzerland reported 52 cases of measles. In February 2017, a vaccinated man died of measles in Switzerland. He was undergoing strong immunosuppressive treatment for leukaemia, which explains why the measles vaccination did not protect him. This is the first measles death in Switzerland since 2009.

ECDC assessment

Measles outbreaks continue to occur in EU/EEA countries, and there is the risk of spread and sustained transmission in areas with susceptible populations. The national vaccination coverage remains less than 95% for the second dose of MMR in the majority of EU/EEA countries. The progress towards elimination of measles in the WHO European Region is assessed by The European Regional Verification Commission for Measles and Rubella Elimination (RVC). Member States of the WHO European Region are making steady progress towards the elimination of measles. At the fifth meeting of the RVC for Measles and Rubella in October 2016, of 53 countries in the WHO European Region, 24 (15 of which are in EU/EEA) were declared to have reached the elimination goal for measles, and an additional 13 countries (nine in the EU/EEA) were concluded to have interrupted endemic transmission for between 12 and 36 months, meaning they are on their way to achieving the elimination goal. However, six EU/EEA countries were judged to still have endemic transmission of measles: Belgium, France, Germany, Italy, Poland and Romania.

Source: WHO/Europe

Actions

ECDC published a rapid risk assessment on 6 March. ECDC monitors measles transmission and outbreaks in the EU/EEA on weekly basis through enhanced surveillance and epidemic intelligence activities.

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Measles cases, Romania, 2008 to week 2017 - 14

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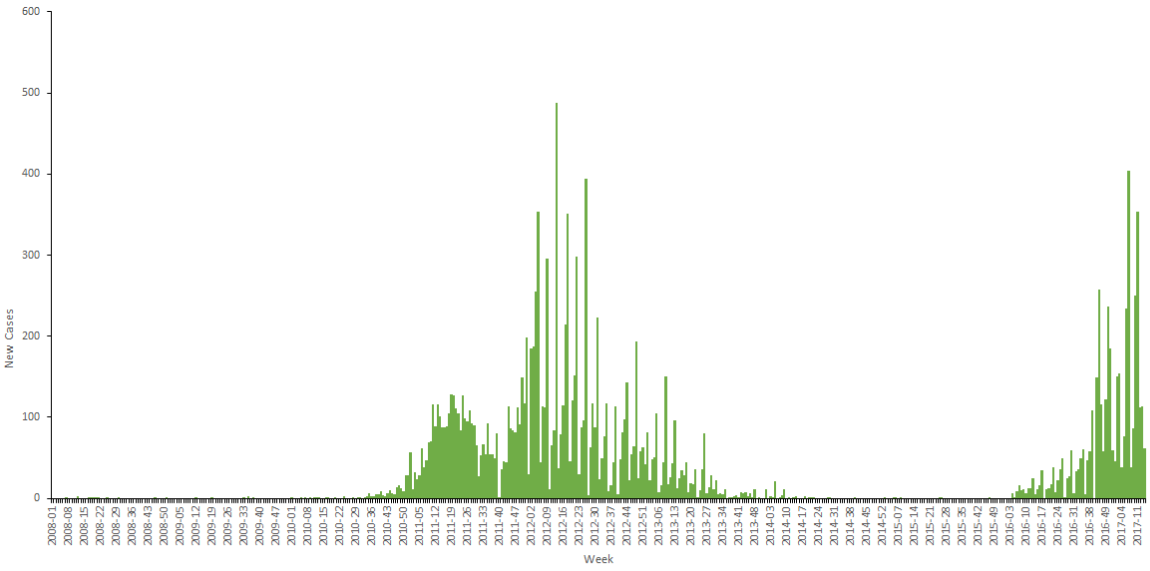

*From 2008 to 2016-39 data from TESSy, from 2016-40 onwards data from Romanian MoH

New! Detection of pathogenic bacteria in CRISPR Kit – Multistate

Opening date: 11 April 2017 Latest update: 13 April 2017

Epidemiological summary

According to media and authorities in Germany, at least two kits of DIY Bacterial Gene Engineering CRISPR Kit® produced by a US-based company were found positive for pathogenic microorganisms. The incriminated kits, available for sale on the Internet for general public and marked as safe for home use, were found by local health and food safety authorities in Germany.

Source: media, media, Bayern Authorities, German authorities

ECDC assessment

The contamination of the incriminated products pose a risk to human health. Given that the product is available to order on the Internet and that there is no information on current distribution, there is a potential that diseases may occur among the users of these kits.

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Actions

ECDC is preparing an RRA.

Yellow fever – South America – 2016/2017

Opening date: 16 January 2017 Latest update: 13 April 2017

Epidemiological summary

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 primates. The virus is transmitted by mosquitoes from 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:
Between 6 January and 6 April 2017, Brazil reported 1 156 cases (552 suspected and 604 confirmed), including 250 deaths (48 suspected and 202 confirmed).

States reporting suspected and confirmed autochthonous cases:
- Minas Gerais has reported 698 cases (260 suspected and 438 confirmed), including 185 deaths (37 suspected and 148 confirmed).
- Espírito Santo has reported 365 cases (219 suspected and 146 confirmed), including 52 deaths (nine suspected and 43 confirmed).
- Rio de Janeiro has reported 49 cases (38 suspected and 11 confirmed), including two deaths (one suspected and one confirmed).
- São Paulo has reported 13 cases (eight suspected and five confirmed), including three confirmed deaths.
- Pará has reported seven cases (three suspected and four confirmed), including four confirmed deaths.

States reporting suspected autochthonous cases:
Six states have reported 24 suspected cases: Paraná (9), Bahia (8), Rio Grande do Sul (4), Distrito Federal (1), Goiás (1) and Tocantins (1, fatal).

Other countries in South America:
From week 1 to 14 of 2017, five other countries reported suspected or confirmed cases of yellow fever: Bolivia (1), Colombia (1), Ecuador (1), Peru (9) and Suriname (1).

Sources: Brazil MoH | PAHO | WHO vaccination recommendations

ECDC assessment

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 obtain medical advice about being 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 rapid risk assessment on the outbreak of yellow fever in Brazil on 26 January 2017 and a rapid risk assessment on yellow fever among travellers returning from South America on 15 March 2017. ECDC is also producing epidemiological updates and a map for travel advice.

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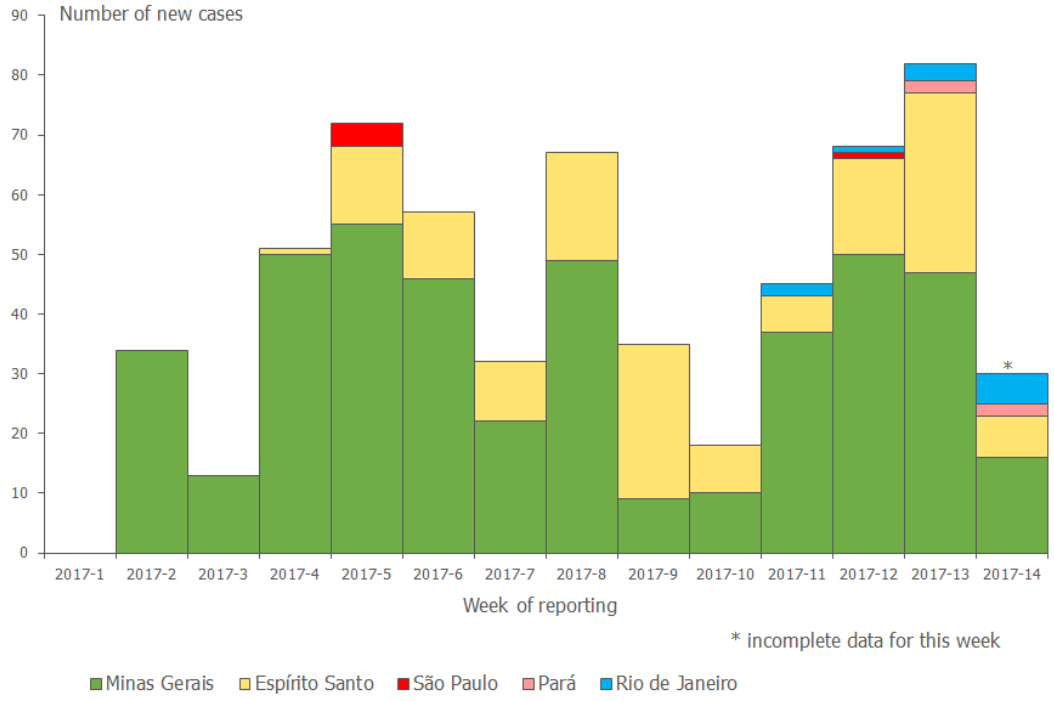
Distribution of confirmed human cases of yellow fever in Brazil by week of reporting from 1 January to 6 April 2017

ECDC



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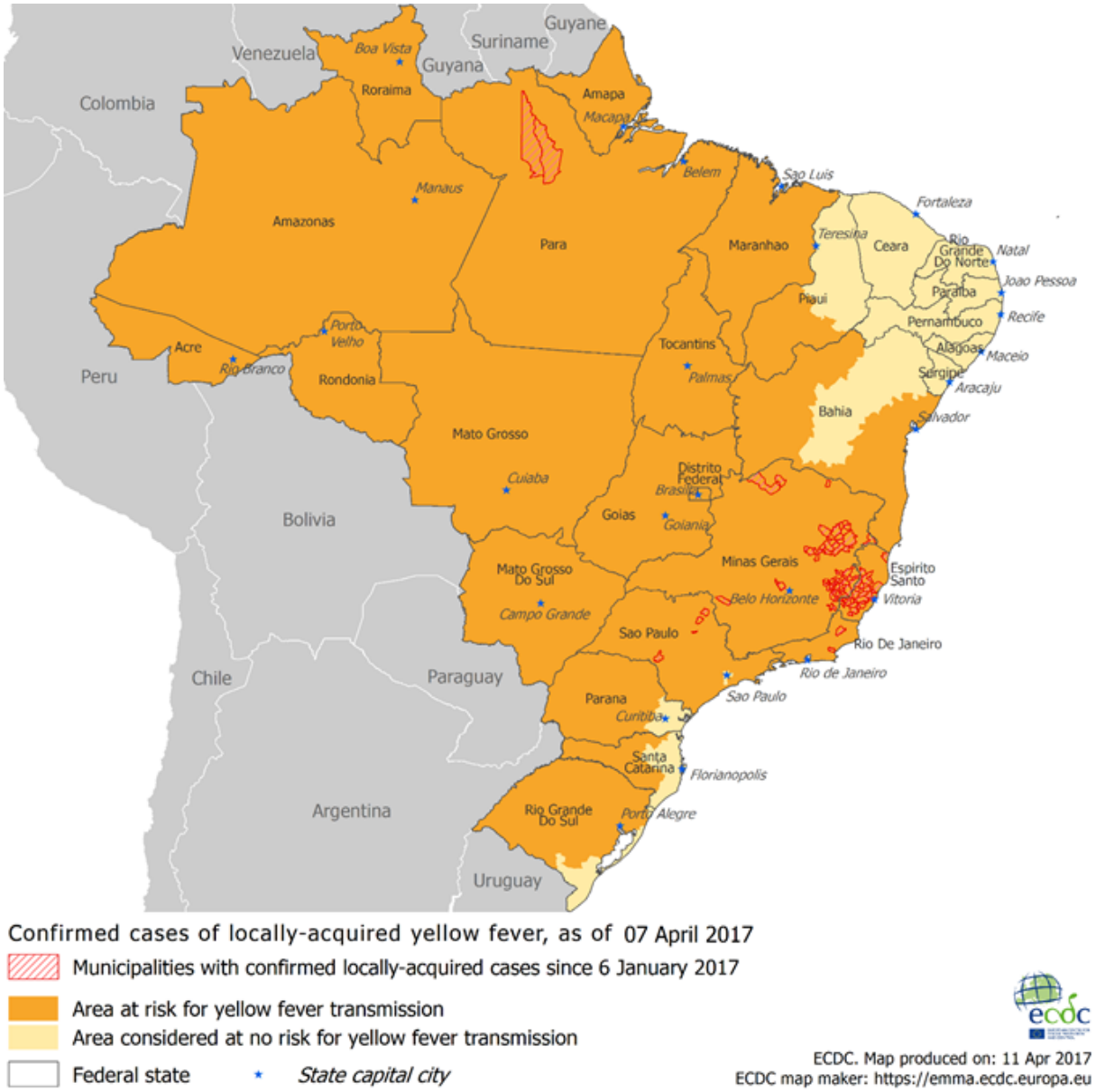
Distribution of confirmed human cases of locally-acquired yellow fever in Brazil, as of 7 April 2017

ECDC



Chikungunya, Dengue and Zika – Multistate (World) – Monitoring global outbreaks

Opening date: 27 January 2017 Latest update: 13 April 2017

Epidemiological summary

Europe:

Chikungunya and dengue:

No autochthonous cases of chikungunya and dengue virus infection have been reported in EU/EEA Member States in 2016 and 2017.

Zika:

No mosquito-borne Zika virus transmission has been reported in EU/EEA Member States in 2016 and 2017. As of 9 March 2017, seven countries (France, Germany, Italy, the Netherlands, Portugal, Spain and the United Kingdom) have reported person-to-person Zika virus transmission since the emergence of Zika virus in the Americas in 2015.

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Since June 2015 (week 26) and as of 4 April 2017, 21 countries (Austria, Belgium, the Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom) have reported 2 142 travel-associated Zika virus infections through The European Surveillance System (TESSy). During the same period, ten EU/EEA Member States reported 132 Zika cases among pregnant women.

Americas and the Caribbean:
Chikungunya:
Since the beginning of 2017 and as of 31 March, PAHO has reported 12 969 suspected and confirmed cases in the Americas and Caribbean region. This is an increase of 8 345 since the last monthly update on 3 March 2017. Most cases are reported by Brazil (10 294), Paraguay (672), Colombia (358), Peru (350) and Panama (317). Brazil has reported 43 567 probable cases in the first seven weeks of 2016.

Dengue:
Since the beginning of 2017 and as of 27 March, PAHO has reported 50 172 suspected and confirmed cases, including 17 deaths, in the Americas and Caribbean region. This is an increase of 19 303 cases since the last monthly update. Most cases are reported by Nicaragua (12 169), Colombia (7 900) and Peru (6 362).

On 2 April 2017, Peru reported 1 210 cases in the general surveillance report of the Ica region. According to media quoting the Ministry of Health, Brazil had reported 70 843 probable cases as of 11 March 2017. In 2016, Brazil reported 1 500 535 cases.

Zika:
On 20 March 2017, Florida reported one additional locally-acquired case. The case was asymptomatic and had multiple exposure in Miami-Dade County in 2016. In week 11 of 2017, Argentina reported the first five cases in Chaco Province. As of week 12, 2017, Formosa and Salta Provinces reported six and two confirmed cases respectively.

Asia:
Chikungunya:
India (New Delhi), Nepal, Pakistan, Taiwan and Thailand have reported cases.

In India, media quoting authorities have reported 60 cases in Delhi since the beginning of 2017 and as of 23 March.

From December 2016 to March 2017, Nepal confirmed approximately twelve cases.

Between 19 December 2016 and 12 March 2017, 885 cases were reported in Karachi (Pakistan). This is an increase of 82 cases since the last monthly update on 8 March. Pakistan Medical Association suggests that the actual number of cases is much higher. Additionally, since the beginning of 2017 and as of 17 March, 472 cases were reported in Gwadar district.

Since 1 January 2017 and as of 2 April, Taiwan has reported three cases.

Since 1 January 2017 and as of 20 March, Thailand has reported four cases from two provinces.

Dengue:
In 2017, the most affected countries in Asia are Malaysia and Sri Lanka. Sri Lanka and Laos have reported more cases than the previous year during the same period, while Cambodia, Malaysia, Singapore and Viet Nam have reported less cases.

Since the beginning of 2017 and as of 2 March, Cambodia has reported 138 suspected cases, which is lower than during the same period in 2014–2016.

Since the beginning of 2017 and as of 28 February, China has reported 54 cases, which is comparable to the same period in 2016 (73 cases reported).

Since the beginning of 2017 and as of 17 March, Laos has reported 489 cases, which is higher than during the same period in 2016 (207 cases reported).

Since the beginning of 2017 and as of 26 March, Malaysia has reported 21 946 cases, which is lower than during the same period in 2016 (35 060 cases reported).

In Saudi Arabia, media quoting public health authorities reported on 20 March 2017 a rapid rise of cases in Jeddah city, a port city on the Red Sea, with 500 cases in the previous 10 weeks.

Since the beginning of 2017 and as of 1 April, Singapore has reported 736 cases, which is lower than during the same period in

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2013–2016.

Since the beginning of 2017 and as 1 April, Sri Lanka has reported around 26 000 cases, including 53 deaths, which is higher than during the same period in 2016 (less than 14 000 cases reported). In 2017, nearly 50% of the cases were reported from the Western Province.

Since 1 January 2017 and as of 2 April 2017, Taiwan has reported 69 cases.

Since 1 January 2017 and as of 3 April 2017, Thailand has reported 3 685 cases from 75 provinces.

In January 2017, Viet Nam reported 6 565 cases reported from 41 out of 63 provinces, which is almost 50% less than during the same period in 2016.

Zika:
Since the beginning of 2017 and as of 7 April, Singapore has reported 11 cases.

In India, media reported that one case was detected in Gujarat in January 2017.

Australia and the Pacific:
Chikungunya:
No outbreak detected this month.

Dengue:
Since the beginning of 2017 and as of 28 March, Australia has reported 333 laboratory-confirmed cases, which is lower than during the same period in 2012–2016. Queensland reported one outbreak in March, in Yorke Island with one confirmed local case (DENV 1).

Since the beginning of 2017 and as of 16 March, Nauru has reported 50 suspected cases and Palau 51 cases (DENV 2).

Between 27 February and 12 March 2017, French Polynesia has reported 43 confirmed cases. Eleven (26%) of them were confirmed as DENV 1 infection.

Since the beginning of the outbreak in September 2016 and as of 6 April 2017, New Caledonia has reported 2 404 cases (DENV 1, 2 and 3), including three deaths. The number of reported cases has been increasing since September 2016. Thirty-one of 33 communes on New Caledonia are affected by dengue fever.

Since November 2016, an outbreak (DENV 2) has been ongoing in Vanuatu, with 2 591 cases as of 6 April 2017, including 104 hospitalisations. The weekly number of cases is decreasing.

Since August 2016 and as of 19 March 2017, all ten provinces of the Solomon Islands have reported 11 875 suspected cases (DENV 2), 96% of them from Honiara (77%) and Guadalcanal Province (19%). Twelve deaths have been associated with this outbreak. The number of cases has decreased significantly since mid-January, indicating a possible slowing down of the outbreak.

Since the beginning of 2017 and as of 16 March, American Samoa has reported 30 suspected and 13 confirmed cases (DENV 2). The government has declared a public health emergency. It is the first time the country has had a case of DENV 2 since 1972.

In Fiji, media quoting public health authorities reported on 3 March 2017 that the number of cases had risen from 143 to 155. In addition, one case with travel history to Fiji was reported by New Zealand for the period between 1 and 7 April.

Zika:
According to the MMWR article published on 24 March 2017, the American Samoa Department of Health, with the support of CDC, established a timeline for discontinuation of routine screening of asymptomatic pregnant women and developed criteria to calculate the end date for Zika mosquito-borne transmission. Given the good surveillance system implemented in the islands, American Samoa has been classified as an area with interrupted transmission and with potential for future transmission (Cat. 3), according to the current country classification scheme.

Africa:
Chikungunya:
No major outbreak detected this month.

Dengue:
According to UNICEF, Kenya has reported confirmed cases in Mandera City, in the northern part of the country.

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Zika:
No epidemiological update.

ECDC assessment

Chikungunya: Outbreaks are still ongoing in the Americas and the Pacific, but at a lower level than during the same period in 2015, except for Brazil that reported significantly more cases in 2016 compared to 2015.

Dengue: Dengue is widely spread in tropical and subtropical regions. Introduction and autochthonous transmission of dengue fever in Europe is possible where competent vectors are present.

Zika: Despite the decrease in intensity of Zika virus transmission after the 2016 wave, cases are still reported in the Americas and Asia where the vectors, *Aedes* mosquitoes, are widely distributed. As neither treatment nor vaccines are available, prevention is based on personal protection measures. Pregnant women should consider postponing non-essential travel to Zika-affected areas.

Europe is vulnerable to the autochthonous transmission of arboviruses. The risk of onward transmission in Europe is linked to importation of the virus by viraemic patients in areas with competent vectors (*Aedes albopictus* in mainland Europe, primarily around the Mediterranean, and *Aedes aegypti* on Madeira). Autochthonous transmission from an imported viraemic case is possible during the summer season in the EU/EEA and continued vigilance is needed to detect imported cases in tourists returning to the EU from affected regions.

Actions

ECDC monitors these threats on a monthly basis. ECDC published the tenth update of its rapid risk assessment on Zika virus disease epidemic on 4 April.

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 13 April 2017

Epidemiological summary

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 6 April 2017, 1 378 cases have been reported to WHO, including at least 497 deaths. The A(H7N9) outbreak shows a seasonal pattern. The first wave in spring 2013 (weeks 2013-7 to 2013-40) included 135 cases, the second wave (weeks 2013-41 to 2014-40) 320 cases, the third wave (weeks 2014-41 to 2015-40) 224 cases, and the fourth wave (weeks 2015-41 to 2016-40) 119 cases. A fifth wave started in October 2016 (week 2016-41), with 580 cases as of 12 April 2017.

The 1 378 cases were reported from Zhejiang (303), Guangdong (256), Jiangsu (243), Fujian (105), Anhui (93), Hunan (83), Shanghai (56), Jiangxi (49), Guangxi (28), Hubei (28), Hong Kong (21), Henan (19), Guizhou (17), Shandong (15), Beijing (14), Sichuan (11), Xinjiang (10), Taiwan (5), Hebei (4), Chongqing (3), Liaoning (3), Jilin (2), Macau (2), Tianjin (2), Yunnan (2) and Tibet (1). Three imported cases were reported in Canada (2) and Malaysia (1).

Sources: Chinese CDC | WHO | WHO FAQ page | ECDC | Hong Kong CHP

ECDC assessment

This is the fifth winter season in the northern hemisphere with human cases caused by A(H7N9) infections. During this wave, the number of human cases has been higher than in previous waves. This is most likely due to greater environmental contamination in live bird markets and increased circulation of the virus among poultry.

In February 2017, a new A(H7N9) virus with mutations in the haemagglutinin gene – indicating high pathogenicity in poultry – was detected in three cases related to Guangdong, as well as in environmental and poultry samples. It is unclear at the moment if the newly emerged, highly pathogenic avian influenza (HPAI) virus A(H7N9) will replace the low-pathogenic virus or if both will co-circulate in the bird population. Although the genetic changes in A(H7N9) may have implications for poultry in terms of pathogenicity, surveillance and control strategies, there is no evidence to date of increased transmissibility to humans or sustainable human-to-human transmission.

The continued transmission of A(H7N9) to humans in China poses the risk that sporadic imported cases may be detected in Europe. The following options for prevention and control of the infection should be considered:

European Centre for Disease Prevention and Control (ECDC)
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Link to ECDC CDTR web page – including related PowerPoint© slides

- People travelling to China should avoid direct exposure to poultry and refrain from visiting live poultry markets or backyard farms;
- Travellers who have visited affected areas and develop respiratory symptoms and fever upon their return should consult a physician and mention their recent travel history to enable early diagnosis and treatment; and
- Travellers who have visited affected areas should avoid entering farms for the entire duration of the 10-day incubation period (and during the symptomatic period in the event that they develop symptoms) in order to prevent a possible virus introduction to poultry in the EU.

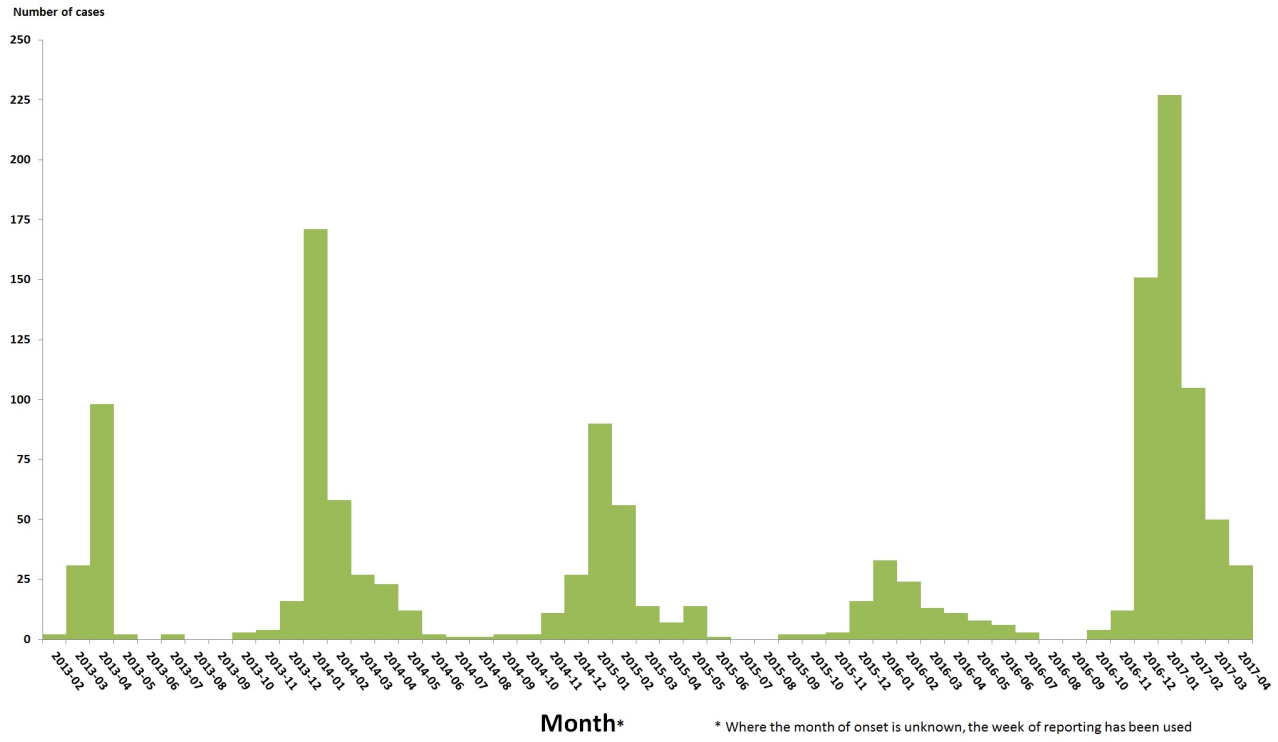
The possibility of humans infected with A(H7N9) returning to the EU/EEA cannot be excluded. However, the risk of the disease spreading within Europe via humans is still considered low, as there is no evidence of a sustained human-to-human transmission.

Actions

ECDC published a sixth update of the rapid risk assessment on 9 March, addressing the genetic evolution of influenza A(H7N9) virus in China and the implications for public health.

Distribution of confirmed cases of A(H7N9) by first available month, February 2013 to 12 April 2017 (n=1 378)

ECDC, WHO, Hong Kong



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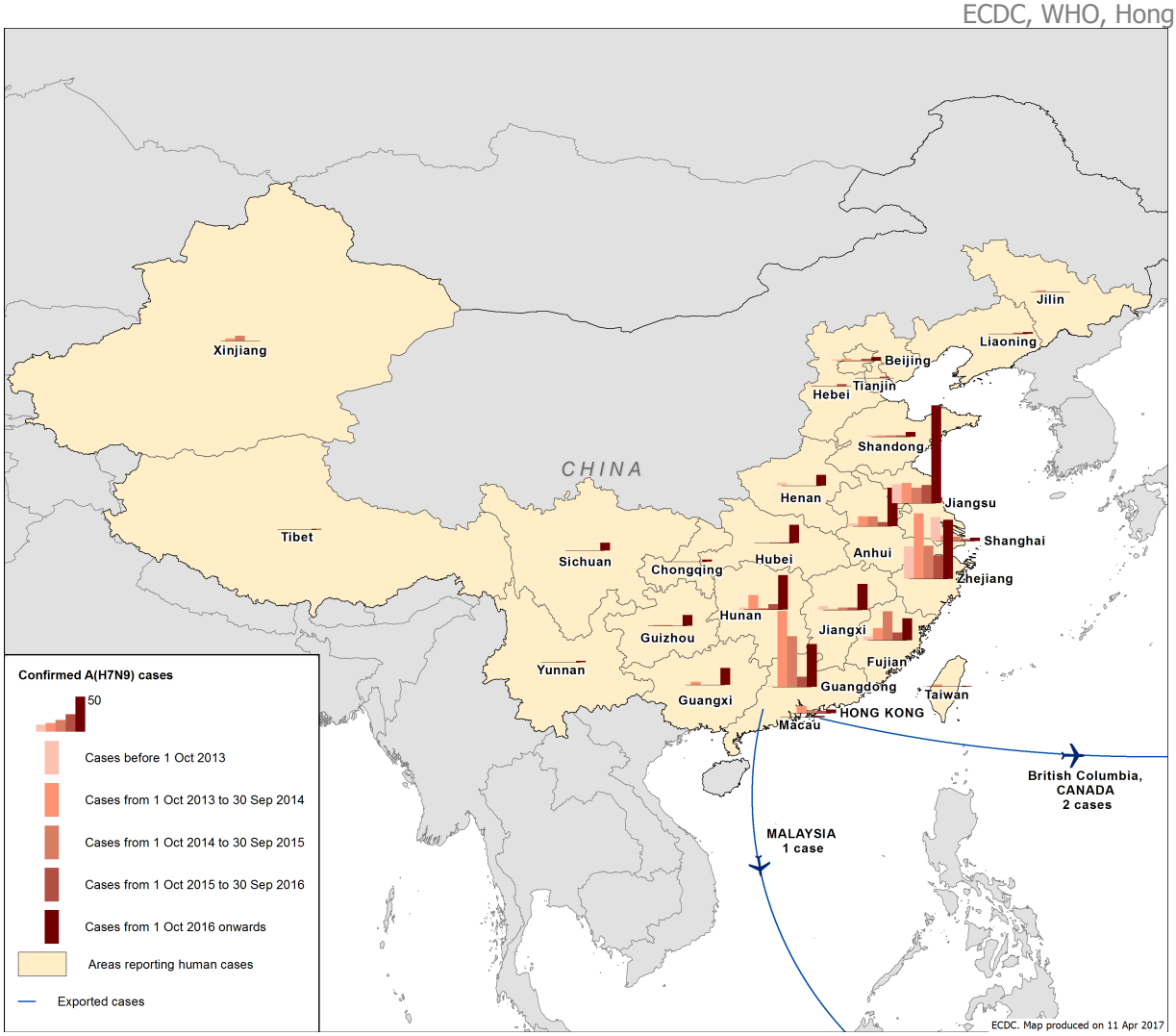
Distribution of confirmed cases of A(H7N9) by place of reporting and season (February 2013 to 12 April 2017)

ECDC, WHO, Hong Kong



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